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ANNUAL REPORT

NEW YORK ZOOLOGICAL SOCIETY

THIS IS THE SIXTY-THIRD
ANNUAL REPORT OF THE
NEW YORK ZOOLOGICAL
SOCIETY - - - - 1958

THE SOCIETY'S OFFICES
30 EAST 40TH STREET, NEW YORK 16

THE ZOOLOGICAL PARK
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THE AQUARIUM
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NEW YORK ZOOLOGICAL SOCIETY

SUMMARY OF 1958

FAIRFIELD OSBORN, *President*

JOHN TEE-VAN, *General Director, Zoological Park & Aquarium*

JAMES A. OLIVER, *Director, Zoological Park*

CHRISTOPHER W. COATES, *Director, Aquarium*

NOT OFTEN have the New York Zoological Society's interests spanned such distances and touched such varied concerns as they did in 1958. Mountain Gorillas in Central Africa; wildlife resources in Alaska; birds, butterflies and fiddler crabs in Trinidad; Prairie Dogs in the American West; land-and-sea fauna in the Bahamas; Fire Ants and the urgently important problem of chemical pesticides in many parts of the United States—these are samples of the broader aspects of the Zoological Society's affairs, apart from the day-by-day business of operating the New York Zoological Park and the New York Aquarium.

Dr. John T. Emlen of the University of Wisconsin, working under a grant from the National Science Foundation and the Zoological Society, was dispatched to Central Africa for six months to set up a field study of the ecology and behavior of the Mountain Gorilla, a threatened species. The work will be continued for two and a half years by his Chief Assistant, George B. Schaller. If time and conditions permit, the study will be extended to the Chimpanzees of the area.

The vast and complex problem of Africa's disappearing wildlife is causing increasing concern and at the year's end the Society was preparing to bring Noel Simon, chairman of the Kenya Wild Life Society, to New York for discussions of the most effective ways of focussing American interest on the problem. The Society's own specific contribution, a summary handbook of African parks, nature reserves and wildlife, is now in preparation by George Treichel, who had previously spent 14 months in Africa as the emissary of the Society.

The Society's studies of the mighty Brooks Range in Alaska in previous years have been generously endorsed by individuals interested in wildlife conservation in the 49th State and it now appears that the Secretary of the Interior is prepared to recommend to Congress the creation of an Arctic Wildlife Range in that area.

A matter of even broader import—the whole field of Alaskan

resources—is under examination by the Society's affiliate, The Conservation Foundation, and an expert investigator has established headquarters in Juneau.

The Zoological Society's field station in Trinidad, under its Department of Tropical Research, is now in its ninth year on a spur of the Northern Range of that tropical island. Continued intensive investigations of the morphology and habits of tropical butterflies, the behavior of manakins and oilbirds and the life histories of fiddler crabs—a world-wide form—have now reached the point where important scientific conclusions can be drawn.

Society-sponsored investigations of the life history of the once common but now considerably restricted Prairie Dogs of the western plains of the United States bore the fruit of publication in 1958 when "Prairie Dogs, Whitefaces and Blue Grama," by Dr. Carl B. Koford, was published for the Zoological Society as a Monograph of the Wildlife Society.

The concept of a land-and-sea park, or nature reserve, is a relatively new one, but the Zoological Society has had a gratifying success in its efforts in behalf of the Exuma Cays National Park in the Bahamas. Following a survey of the possibilities for marine life protection in the Exuma Cays, in which the Society participated, the Bahamas Legislature has created a National Park in this interesting and novel area.

The vast increase in recent years in the use of chemical pesticides to control or eradicate insect pests has caused such widespread concern, not only because of the possible effects on human health but because of the harm they hold for wildlife, that the Zoological Society has felt impelled to make its own independent studies in an attempt to throw a factual, dispassionate light on matters that have frequently been hotly debated. Some of these studies have been chiefly the concern of The Conservation Foundation; in others both the Society and the Foundation have participated. The published reports, particularly those dealing with the imported "Fire Ant" in the South, have been widely distributed and quoted.

In quite a different—and more cloistered—atmosphere, work has continued on a three-volume "Check List of Genera of Recent Mammals of the World," by Ernest P. Walker, formerly Assistant Director of the National Zoological Park in Washington. This monumental undertaking is supported by grants from the National Institutes of Health and is under the sponsorship of the New York Zoological Society. It is at least two years from publication.

Now nearing its end, after six years of research and writing, is a practical book on the care of mammals in zoological parks, by Lee

S. Crandall, General Curator Emeritus of the New York Zoological Park.

FINANCIAL MATTERS. The Society was "in the black" at the end of 1958 by a mere \$7,901.95 excess over operating costs. This narrow margin holds no slightest promise for equally good news in successive years, unless the Society's capital funds are substantially increased. Efficient management has limits beyond which it is no longer efficient: rising costs and a fixed income from investments inevitably must lead to deficits. This obvious point is stated explicitly in the expectation that Members and friends of the Society will wish the Society to continue and even to expand its work in wildlife and conservation fields and will make it possible by enlarging the Society's capital funds.

There has been a most encouraging upswing in Membership support through dues, and especially in the new Supporting Members class. Membership fees were at a record high of \$58,869.50. Special gifts from Members and others totalled \$105,620.26 and legacies, either paid in or on notification, aggregated \$275,000.00. Grant funds totaling \$48,463.00 were received. Without this generous help the Society would have been seriously hampered in its work.

ADMINISTRATION. Three new Trustees were welcomed to the Board of the Society in 1958: Alexander Aldrich, Otto Marx, Jr., and Joseph A. Thomas.

At the Zoological Park, Dr. James A. Oliver, Curator of Reptiles since 1951, was made Director. Dr. John Tee-Van continues as General Director of the Zoological Park and the Aquarium. On the resignation of Dr. Leonard J. Goss as Veterinarian and Assistant Director, to become Director of the Cleveland Zoological Park, Dr. Charles P. Gandall, formerly Assistant Veterinarian, was made Veterinarian. Joseph A. Davis, Jr., was named Assistant Curator of Mammals following the departure of Dr. John L. George as Curator of Mammals.

THE ZOOLOGICAL PARK. For the second year in succession the Zoological Park's collection numbered more than 1,000 species and subspecies of mammals, birds, reptiles and amphibians; the exact figure is 1,031. To the best of our knowledge only one or two zoological parks in the world exceed the 1,000 mark.

Complete remodelling of the interior—and the east side exterior—of the Monkey House was virtually completed at the end of the year. This building has been closed since 1950 and will be reopened in the spring of 1959.

The former White-tailed Deer Range east of the Monkey House has been thinned of some trees, levelled and reseeded in grass, and

will now become the new home of a herd of Roosevelt Elk. The former Elk Range has been incorporated in the enlarged Crotona Parking Field, scheduled for completion in the early summer of 1959, with an added capacity of 500 automobiles.

Assurance was received late in the year that the City of New York will underwrite three-quarters of the cost of a new Aquatic Bird House, the Society undertaking the remaining quarter. The present Aquatic Bird House was opened in 1899—it was, in fact, the scene of the opening ceremonies for the Zoological Park on November 8, 1899—and is at present decrepit and outmoded. Construction on the new building, in the most modern design, will start in 1960.

A rainy year had its inevitable effect on Zoological Park attendance and the recent gradual increase in attendance was interrupted. For the first time since 1919 it fell below 2,000,000 visitors—1,948,945.

At least contributory to this decline was the work stoppages by employees in the spring, the first such stoppages in the Zoological Park's history. On two occasions employee members of Local 1501 of the American Federation of State, County and Municipal Employees, of the CIO-AFL, left their work to demonstrate against the City. Although the Union stated that it had no grievance against the Zoological Society, it closed the Park on a one-day walkout and, later, on a four-day strike. A minimum force of employees was provided to care for the animals. The walkouts occurred in periods of fine spring weather when, normally, scores of thousands of visitors would have come to the Zoo.

THE AQUARIUM. The Society has now had experience with the first full calendar year's operation of the Aquarium at Coney Island and certain conclusions can be drawn.

One is that the exhibit is undeniably and strongly attractive to visitors—not only those who normally frequent the Coney Island amusement area, but “out-of-towners,” the visitors who have made trips from a distance especially to see the Aquarium. As expected, the aquatic exhibits have had a strong appeal to schools, and of the 226,942 visitors in 1958, some 31,000 were school children in conducted groups.

What the attendance might have been if the “Coney Island season” had not been virtually rained out during most of the spring and early summer, we can only surmise. As it was, the facilities of the Aquarium were overtaxed on several occasions.

This serious problem of overcrowding of the exhibition hall on peak days gives rise to the other general conclusion: that the exhibition area must be enlarged and dispersed in order to accommodate the crowds that fine summer days and warm week-ends inevitably

bring. At the year's end a master plan for a three-stage development was about to be adopted, with work on the first stage ready to begin in the spring of 1959. This plan would virtually double the exhibition area and permit the creation of several new kinds of exhibits.

Water supply from the ocean, and especially the clarity of the water, have been serious problems up to now. These seem to have been solved by the curious expedient of drilling wells for salt water on the Aquarium's own grounds, rather than depending on well-points and a pipe line drawing water from the ocean itself.

Since the Aquarium is the first (and only) quasi-public institution in New York City expected to operate on a self-supporting basis, the financial situation of the institution is of interest. In 1957, the first partial year of operation, a profit of \$69,160.37 was accumulated. In 1958, for reasons which we ascribe largely to the weather, there was an operating loss of \$85,877.15, so that the net loss since the opening of the Aquarium in June, 1957, to the end of December, 1958, was \$16,716.78. By agreement with the City, \$8,358.39 of this deficit will be met by the City.

We have good reason to believe that the situation will correct itself in 1959, if seasonal conditions are normal. In any event, weather is a thing the Aquarium must learn to live with, and the Zoological Society expects that the current program will go far toward establishing this new institution as one of the outstanding attractions of New York.

SUMMARY OF ATTENDANCE

ZOOLOGICAL PARK

<i>Month</i>	1957	1958
January	35,924	21,713
February	70,879	26,252
March	171,284	130,185
April	248,037	217,127
May	275,746	231,086
June	274,127	231,256
July	307,499	297,970
August	293,034	328,039
September	213,669	194,199
October	106,905	128,768
November	105,104	110,021
December	63,326	32,329
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	2,165,534	1,948,945

Total visitors from November 9, 1899,
to December 31, 1958. 127,452,364

DEPARTMENT OF MAMMALS

JOHN L. GEORGE, *Associate Curator* (to May 2)

JOSEPH A. DAVIS, JR., *Assistant Curator* (since November 1)

GRACE DAVALL, *Assistant Curator*

JOSEPH RUF, *Head Keeper*

MARIO ROLLA, *Assistant Head Keeper*

LEE S. CRANDALL, *General Curator Emeritus*

RENOVATION AND REPAIR of the Antelope, Elephant and Monkey Houses caused the first two to be closed to the public for part of 1958 and the latter for the entire year. Many mammals had to be transferred to temporary quarters. Prior to the re-roofing of the fifty-five-year-old Antelope House, smaller and more delicate species such as Gerenuk, Addax, Blesbok, Lesser Kudu and White-eared Kob were moved to the African Plains Antelope House and a Greater Kudu was relocated in the Wild Horse Barn. Some species, too large or too temperamental to be crated and moved, were transferred, in a series of manoeuvres, to stalls on the east side of the Antelope House where they were protected from sight and sound of work in progress on the west side of the roof of the building. The return move of these Giraffes, Okapis, Gnus and Sable Antelope was equally touchy and hazardous. That the task was finished without loss or injury was a tribute to the patience and skill of all of the keepers involved. Re-roofing of the Elephant House fortunately did not necessitate moving any of the occupants. Here, too, due to efficiency and vigilance of the keepers, the project was unmarred by incident or accident. Credit must be given also to the contractors, who adapted their schedules and operation to our requirements.

Remodelling of the Monkey House was practically completed at the end of 1958. The building had been re-roofed and a new floor had been installed during the previous year. With twenty glass-fronted cages containing representative groups of primates, exclusive of the Great Apes, the new Monkey House undoubtedly will again be one of the main attractions in the Park when it opens to the public early in 1959. Widened public space, made attractive with terrazzo floors and planted alcoves, new glass entrance doors, aluminum cage equipment, automatic heat and humidity control, as well as excellent up-to-date facilities for servicing the collection, combine to provide another exhibition unit of which we may be justly proud.

The staff worked with architects in drawing up plans for a new and

improved arrangement of the outside yards of the Kangaroo House to include planted areas, and for changes in the outside cages of the Monkey House that will bring them into harmony with the remodelled building. Work on both projects is scheduled for the spring of 1959.

In order to make space available for the new Crotona Parking Field, it was necessary to remove all Llamas, Vicuñas, Camels and Dromedaries from their corrals along Crotona Walk and provide accommodations for them elsewhere in the Park. Since the large Elk Range also had to be abandoned and no suitable space was available for our herd of Wapiti, these animals were sent to the Catskill Game Farm. The former Moose Range, redesigned and replanted, will be ready for the exhibition of elk in the spring of 1959, when it is planned to secure a male and three or four females of the superb Roosevelt Elk from the Pacific Coast region. Trustee DeForest Grant is underwriting the cost of crating and transporting these animals.

On June 7 we again achieved the distinction of being the only zoological park outside Australia to exhibit Platypuses. After months of work collecting and conditioning them to captivity, David Fleay arrived in New York with "Paul," "Pamela" and "Patty," a male and two females of this extremely interesting species. While "Patty" did not adapt to conditions here as well as her two companions did, nevertheless her death on November 6 was a distinct shock. Toward the close of the year, "Paul" was not feeding well and it was hoped that this indisposition was temporary, but he succumbed to a terminal pneumonia on December 20.

A month after the arrival of the Platypuses, we received as a gift from Sir Edward Hallstrom of the Taronga Park Trust in Sydney, Australia, a fine collection including three Great Gray Kangaroos, two Agile Wallabies, a Wallaroo and an Echidna. The Echidna in this shipment gives us the further distinction of having in our collection both of the families that comprise the Order Monotremata.

Another notable "first" was achieved when on November 12 "Ati" and "Mzuri" arrived at the Park. This was the first pair of Mountain Gorillas ever to reach the United States. They had been collected in the Belgian Congo by Charles Cordier, flown to the Antwerp Zoological Gardens in Belgium for a short rest period, then brought to us on an over-night flight from Brussels. Presumably about two years old, the male weighed a little over 22 pounds on arrival, the female, Mzuri, 29 pounds.

Accessions of mammals totalled 164. Of this number, 77 were acquired by purchase, gift or exchange. The remaining 87 represent

viable births among 32 species. The deer herds accounted for 27 of these youngsters. Among other species, the more noteworthy infant arrivals included a White-handed Gibbon, a Wanderoo, a Red Kangaroo, two Bengal Tigers, three Jaguars, a Chestnut Duiker, a Blue Duiker, an Eland, a Grant's Zebra and a Yak.

We were fairly well convinced that our fourteen-year-old tigress "Dacca" had gone beyond her reproductive years, but on November 8 she produced two lusty cubs, her 30th and 31st. Little did we think when she and "Rajpur" were born here on February 8, 1944, that within fifteen years, twenty-five of their cubs would have been dispersed to fourteen American and three foreign zoos. Since Dacca's last four litters had all been males, we were delighted that one of the latest cubs was a female. It was given to Helen Martini for hand-rearing, as another tame, potential breeding tigress is essential to the continuation of our now famous line. The male cub of the current litter was left with his mother and visitors delight in watching him playfully annoy her, until a sound cuff puts him in his place.

Equally engaging were the antics of the three Jaguar cubs born on June 24. When they were three months old and had to be separated from their parents, we were fortunate in being able to make them available to James Simon, who required them for a film sequence he was preparing for the Walt Disney Enterprises. After photographing them in the Park, he wished to complete his work in a compound simulating their natural habitat. Mr. Simon therefore purchased the cubs and had them shipped to the Crandon Park Zoo in Miami, Florida, where they were put on exhibition in a natural setting.

Other important accessions during 1958 included purchases of a pair of Lesser Pandas, a Haitian Solenodon, a male Spectacled Bear, three young California Sea Lions, a pair of Ferret-Badgers, a pair of Mandrills and two Red and one Bald Uakari. The Ferret-Badgers, *Melogale moschata*, had not previously been exhibited in our collection. Other new species included the Desert Pocket Mouse, *Perognathus penicillatus penicillatus*, Bailey's Pocket Mouse, *Perognathus baileyi baileyi*, Southern Grasshopper Mouse, *Onychomys torridus torridus*, White-throated Wood Rat, *Neotoma albigula albigula*, and a pair of albino Toque Macaques, *Macaca sinica sinica*.

Surplus animals totalling 96 were disposed of by sale or exchange to zoological parks, museums and other institutions including the National Zoological Park in Washington, D. C.; Tracy Aviary, Salt Lake City, Utah; Millbrook School, Millbrook, N. Y.; Earlham College, Richmond, Ind.; Swarthmore College, Swarthmore, Penn.; College of Physicians and Surgeons, New York; the Catskill Game Farm, Catskill, N. Y.; and the Zoological Park in Kibbutz, Urim, Israel.

Dr. John L. George, Associate Curator since September 13, 1957, left the staff on May 2. Joseph A. Davis, Jr., joined it on November 1 as Assistant Curator. Mr. Davis is a doctoral candidate at Cornell University and has been in the Mammal Department of the American Museum of Natural History, doing taxonomic work.

CENSUS OF MAMMALS
December 31, 1958

<i>Orders</i>		<i>Species</i>	<i>Specimens</i>
MONOTREMATA	Platypus and Echidnas.....	2	2
MARSUPIALIA	Kangaroos, Phalangers, Opossums, etc.	7	15
INSECTIVORA	Moles, Shrews, Hedgehogs, etc. ...	2	2
PRIMATES	Apes, Monkeys, Lemurs, Marmosets, etc.	45	75
EDENTATA	Armadillos, Sloths, Anteaters	2	2
TUBULIDENTATA	Aardvark	1	1
RODENTIA	Squirrels, Beavers, Mice, Porcupines, etc.	17	56
CARNIVORA	Bears, Raccoons, Cats, Dogs, Otters, etc.	31	71
PINNIPEDIA	Seals, Sea Lions, Walruses.....	5	12
PROBOSCIDEA	Elephants	3	5
PERISSODACTYLA	Horses, Tapirs, Rhinoceroses.....	6	10
ARTIODACTYLA	Cattle, Sheep, Antelopes, Camels, Giraffes, Deer, Swine, Hippopotamuses	48	231
	TOTALS	169	482

Summary: Orders, 12; Species, 169; Specimens, 482.

DEPARTMENT OF BIRDS

WILLIAM G. CONWAY, *Curator*

GRACE DAVALL, *Assistant Curator*

JOSEPH BELL, *Head Keeper*

GEORGE WILLIAMSON, *Assistant Head Keeper* (to February 4)

ANDREW WINNEGAR, *Assistant Head Keeper* (since February 6)

LEE S. CRANDALL, *General Curator Emeritus*

THE BIRD DEPARTMENT ended 1958 with 643 species and subspecies and 1,689 specimens. The collection remains, by far, the largest in the Western Hemisphere.

Our major buildings, the Large Bird House, the Aquatic Bird House, the Pheasant Aviary and the Ostrich House, reflect their early construction and many years of intensive public use, and the problems imposed by the fine bird collection constantly reveal the limitations of our housing. Modern advances in exhibition beauty and technique in other zoos, both in the United States and abroad, combine to make us feel the inadequacies of these four largest buildings. However, in 1958 plans were begun for replacement of the Aquatic Bird House that was built in 1899. It is hoped that construction will begin in late 1959 or early 1960. Plans for improving the Eagle and Vulture Aviary (built in 1910) and renewing its metal structure, within the limits of the City's Capital Budget Program, were completed with Mr. Driscoll. Reconstruction is scheduled for 1959.

During the year a good number of improvements were completed in bird exhibits. The Marsh Garden pond was dredged, its bottom paved and parts of the enclosure replanted. At the Wildfowl Pond a new fence was erected, additional grading and planting completed and several gravel beach areas added. These improvements, with careful control of the grass-cutting program by the Maintenance Department, resulted in our first botulism-free year in some time. Research, noted in last year's Report, has made this advance possible. While constant vigilance at the waterfowl ponds will always be necessary, the improvements have made possible a wonderful extension in our wildfowl collection, which now includes more than eighty species. At the Large Bird House the exterior west side cages were completely refurbished and rewired. For the first time in many years it will be possible to establish an attractive exhibit there. The interior of the Large Bird House was almost entirely replanted and the Department continued its program of cage decoration in this building.

The Maintenance Department completed an attractive replanting of the large outside Flying Cage.

In an attempt to add to the value of our exhibits, a program of special educational display signs was initiated during the year. A trial sign, presenting general information on flamingos in a striking pictorial style, was completed and other signs were started. While still experimental, this project should add greatly to visitor enjoyment of the zoo and realization of exhibit value.

The artificial incubation and rearing program established last year made excellent progress in 1958. New brooders, some built to special design, were acquired and a forced-air incubator, permitting the incubation of eggs of varying sizes at one time, was purchased. Wild duck eggs, imported from Iceland, were again the subject of experiment and again hatching success was good. This year, however, we were much more successful in rearing the delicate ducklings, although much more work is needed with certain species. Many birds, principally waterfowl, were reared from eggs laid in the Zoo's collection. Essential to the progress of the breeding program has been the devotion of the Department's keeper staff, especially Head Keeper Bell, who for months unfailingly cared for eggs and chicks late each night. We take special pleasure in noting that the two Atlantic Puffins, part of an experimental 1957 rearing program, continue to do well and that a special display for northern sea birds is proposed in the new Aquatic Bird House.

Work on bird foods and feeding methods has continued. In January a first revision of Large Bird House diets was put into effect. Later, Pheasantry and Ostrich House regimens were improved, and an experimental diet designed to improve feather color was instituted for the flamingo collection. This last diet has been spectacularly successful and our flamingos' change from pale pink to deep rose red occasioned a great deal of publicity. A number of dietary experiments designed to help us find ways to combat the loss of brilliant reds, yellows and oranges in birds as diverse as toucans and minivets, woodpeckers and tanagers, have begun. Through the efforts of Dr. Goss, Dr. C. M. McCay of the Cornell School of Nutrition visited the Park and made several valuable suggestions toward improving bird diets. Mr. James Corbin of Ralston Purina's Special Research Laboratories also visited the collection and offered valuable advice.

In addition to our usual cooperation with other departments of the Zoological Society, the Bird Department helped with or supplied material for bird research programs at the American Museum of Natural History, the United States Fish and Wildlife Service, Rutgers University, Cornell University and Duke University. Audubon Park

Zoo's Curator, Mr. William Belknap, received a week's training in the Department, as did Mr. William Widmann, Senior Keeper of Birds for the National Zoological Park. The Curator travelled to Boston to advise the Massachusetts Metropolitan District Commission on development of the Franklin Park Zoo. At the request of the National Zoological Park, the Curator went to Washington, D. C., to recommend improvements for that zoo's bird collection. General Curator Emeritus Crandall and Mr. Conway served on the Mammal Committee during the second half of 1958.

For the Curator, the high point of the year was his representation of the Society at the XIth meeting of the International Committee for Bird Preservation and the XIIth International Ornithological Congress, held consecutively in Helsinki, Finland. The meetings and scientific sessions coupled with direct contact and interchange of ideas with professional colleagues from far-flung places, provided stimulation which could not be equalled in any other fashion. Mr. Conway was elected to the General Secretariat of the ICBP. Following the meetings, the Curator visited certain zoos in Denmark, Germany, Belgium and Great Britain. A striving for constant improvement was evident at all of these zoos and the benefits derived from the examination of each zoological park's answer to the universal problems of animal exhibition are invaluable to a zoo curator. Mr. Conway also attended the 23rd North American Wildlife Conference in St. Louis and visited zoos in St. Louis and Chicago. At the Wildlife Conference, in a meeting of the Whooping Crane Advisory Committee, the Curator presented a program for the future development of the captive Whooping Crane population. During October, Mr. Crandall and Mr. Conway represented the Society at the 76th meeting of the American Ornithologists' Union in New York. The Society gave a luncheon and tour of the bird collection for the Union.

Five hundred forty-one specimens were received during 1958, of which 306 were purchases. The remainder were largely the results of exchanges and donations or gifts of native birds, often young or injured specimens. So many exceptionally interesting birds were added to the collection that only a few may be mentioned here. Mr. John H. Phipps, a Trustee, presented a pair of South African Crowned Cranes, and pairs of Paradise and Indian Sarus Cranes were acquired. We now exhibit 14 of the 23 named forms of crane. Nearly 200 waterfowl were acquired from Mr. T. Donald Carter, and other purchases included Magellan and Ruddy-headed Upland Geese, Hartlaub's Ducks, an African Black Duck and Abyssinian Blue-winged Geese. A pair of Argentine Red Shovellers was received from Great Britain's Wildfowl Trust. These rare birds are progeny of a duck from the

Society's collection sent to England in 1950 and paired with a drake which somehow survived from Mr. Jean Delacour's pre-World War II collection in France. So far as we know, almost all captive-bred Red Shovellers are descended from this pair. A pair of Lesser Flamingos, the first to be exhibited in the Western Hemisphere, were received in a most generous exchange from the Chester Zoo in England. This graceful, petite species is the most numerous of all flamingos in the wild yet extremely rare in zoo collections and long thought impossible to keep. Other rarities added to the collection include a Martial Eagle, largest and most powerful of African birds of prey; a Great Black Woodpecker, a European bird comparable to the Pileated Woodpecker of the United States in size; and a striking rare Black Solitaire from South America. Several especially welcome donations were received, the most notable being a large collection from Sir Edward Hallstrom and the Taronga Park Zoo, Sydney, Australia, which included a Papuan Cassowary, Eyton's Tree Ducks and Tawny Frogmouths. Robert Raabe, a keeper in the Bird Department, brought the collection to the United States. Retired Head Keeper George Scott brought 25 birds of 15 species to us from the Exposicion Internacional de Caracas 1960.

On February 4 Assistant Head Keeper George Williamson died suddenly. Mr. Williamson, always cheerful and conscientious, had served the Society for 32 years and was devoted to his work. His loss is keenly felt. Mr. Andrew Winnegar, former Ostrich House Keeper, has been a very fortunate appointment as Mr. Williamson's successor.

Mr. Conway wrote the following articles for ANIMAL KINGDOM: "Fine Feathers Make the Bird" and "It's Carrot Oil That Makes Our Flamingos Red—But Why?"

SPECIES NEW TO THE COLLECTION ACQUIRED IN 1958

African White-breasted Cormorant—*Phalacrocorax carbo lucidus* (Lichtenstein)
 Lesser Flamingo—*Phoeniconaias minor* (Geoffroy)
 Abyssinian Black Duck—*Anas sparsa leucostigma* Rüppell
 South Georgian Pintail—*Anas georgica georgica* Gmelin
 Cayenne Kite—*Leptodon cayanensis* (Latham)
 Lilford's Crane—*Grus grus lilfordi* Sharpe
 Eastern Sarus Crane—*Grus antigone sharpii* Blanford
 African Jacana—*Actophilornis africana* (Gmelin)
 Martinique Quail-dove—*Oreopeleia martinica* (Linnaeus)
 Long-tailed Nightjar—*Caprimulgus macrurus* Horsfield
 Bahaman Emerald Hummingbird—*Chlorostilbon ricordii bracei* (Lawrence)
 White-breasted Kingfisher—*Halcyon smyrnensis fusca* (Boddaert)
 Blue-breasted Kingfisher—*Halcyon malimbica forbesi* Sharpe
 Pampas Flicker—*Colaptes campestris campestris* (Vieillot)
 Yellow-fronted Woodpecker—*Melanerpes flavifrons flavifrons* (Vieillot)
 Great Black Woodpecker—*Dryocopus martius pinetorum* (C. L. Brehm)

Costa Rican Tityra—*Tityra semifasciata costaricensis* Ridgway
 Burmese Gray Tree Magpie—*Crypsirina formosae assimilis* (Hume)
 Black Solitaire—*Entomodestes coracinus* (Berlepsch)
 East African Malachite Sunbird—*Nectarinia famosa cupreonitens* Shelley
 Beautiful Sunbird—*Nectarinia pulchella melanogastra* Finsch & Reichenow
 Roraima Chlorophonia—*Chlorophonia cyanea roraimae* Salvin & Godman
 Milne-Edward's Tanager—*Bangsia edwardsi* (Elliot)
 Brewster's Saltator—*Saltator coerulescens brewsteri* Bangs & Penard

CENSUS OF BIRDS December 31, 1958

Orders		Species	Specimens
SPHENISCIFORMES	Penguins	8	24
STRUTHIONIFORMES	Ostriches	2	2
RHEIFORMES	Rheas	2	3
CASUARIIFORMES	Cassowaries and Emus.....	3	5
TINAMIFORMES	Tinamous	1	2
GAVIIFORMES	Loons	1	1
PELECANIFORMES	Pelicans, Cormorants, etc.....	9	14
CICONIIFORMES	Hérons, Ibises, Storks, Flamingos, etc.	29	68
ANSERIFORMES	Swans, Ducks, Geese and Screamers.	91	559
FALCONIFORMES	Vultures, Hawks and Eagles.....	33	47
GALLIFORMES	Quail, Pheasants, etc.....	46	134
GRUIFORMES	Hemipodes, Cranes, Trumpeters, Rails, etc.	26	57
CHARADRIIFORMES	Plovers, Sandpipers, Gulls, etc.....	21	54
COLUMBIFORMES	Pigeons, Doves and Sandgrouse....	31	91
PSITTACIFORMES	Parrots, etc.	29	41
CUCULIFORMES	Touracos and Cuckoos.....	5	6
STRIGIFORMES	Owls	11	25
CAPRIMULGIFORMES	Frogmouths	1	3
APODIFORMES	Hummingbirds	8	16
COLIIFORMES	Mousebirds	2	3
TROGONIFORMES	Trogons and Quetzals.....	1	2
CORACIIFORMES	Kingfishers, Hornbills, etc.....	14	29
PICIFORMES	Barbets, Toucans and Woodpeckers.	27	45
PASSERIFORMES	Perching Birds	242	458
	TOTALS	643	1,689

Summary: Orders, 24; Species, 643; Specimens, 1,689.

DEPARTMENT OF REPTILES

JAMES A. OLIVER, *Curator*

STEPHEN SPENCOOK, *Head Keeper*

MANY exciting and rare reptiles came to the collection in 1958. A number of these had never been exhibited here and were exceptionally welcome, others we had shown on one or more occasions but they represented species seldom seen in zoos. Three of the first-timers were crocodilians that increased our record collection of these reptiles to a total of 16 of the 20 or so living species. They were: Johnson's Crocodile (*Crocodylus johnsoni*) from Australia; the Black Caiman (*Melanosuchus niger*) from northern South America; and the Dwarf Caiman (*Paleosuchus palpebrosus*), also from northern South America. Two turtles, the Pitted-shell Turtle (*Carettochelys insculpta*) from New Guinea and the Ceylon Softshell Turtle (*Lissemys punctatus granosus*), were exhibited for the first time in our collection. The Pitted-shell Turtle is one of the rarest and most unusual turtles in the world and has probably never been exhibited before in the United States. A Red Tegu Lizard (*Tupinambis rufescens*) from northern Argentina and three Turks Island Iguanas (*Cyclura carinata*) from the Bahamas represent rare lizards that do not appear on our records previously.

As in other years, most of the rare species acquired were snakes. From New Guinea we received our first two specimens of the colorful and unusual Green Python (*Chondropython viridis*) and a handsome purplish-brown D'Albertis Python (*Liasis fuscus albertisi*). From the western Pacific came a strikingly marked Banded Sea Snake (*Laticauda colubrina*), our first of this species, which was followed by three more individuals of the same form from Australia. We exhibited for the first time in our collection two species of venomous snakes from Formosa, the Multi-banded Krait (*Bungarus multicinctus*) and the Formosan Bamboo Viper (*Trimeresurus gramineus stejnegeri*), and two Korean Pit Vipers (*Ancistrodon halys brevicaudus*).

The list of other rarities received this year but previously exhibited in the Zoological Park include the following species: Cuban Crocodile (*Crocodylus rhombifer*); Salt-water Crocodile (*Crocodylus porosus*); Large-headed Turtle (*Batrachemys nasuta*); Reeves Turtle (*Chinemys reevesii*); Mountain Devil Lizards (*Moloch horridus*); Yellow Anaconda (*Eunectes notaeus*); Bamboo Snakes (*Liopeltis major*); Jameson's Mamba (*Dendroaspis jamesoni*); and Okinawan Pit Viper (*Trimeresurus monticola*).

During the year a total of 621 amphibians and reptiles were received. This is a decrease of approximately 28 percent. from the previous year and demonstrates the effort being made to reduce the collection to a size that can be maintained adequately with our facilities and staff. More than half of the specimens received were gifts of local or pet turtles and pet crocodilians, mainly caimans from South America. Eighty-three specimens were purchased, while 63 were received as exchanges with other individuals or institutions. We donated 64 specimens for research or educational purposes and sent 115 animals on exchanges.

As in every year, cooperative institutions and generous friends contributed many of the more valuable additions to the collection. The following organizations or individuals made donations or participated in exchanges: the Society's Department of Tropical Research; the New York Aquarium; the Staten Island Zoo; the American Museum of Natural History; the Zoological Society of San Diego; Saul Blickman, a Founder in Perpetuity; Lincoln Park Zoo, Chicago; Milbauer Museum of Natural History, Point Pleasant, N. J.; Buffalo Zoo; National Zoological Park, Washington, D. C.; Philadelphia Zoological Garden; Honolulu Zoological Park; the Catskill Game Farm, Catskill, N. Y.; El Paso Reptile Gardens; the United Fruit Company, Weehawken, N. J.; Department of Biology, Adelphi College, New York; Denison College, Granville, Ohio; College of Physicians and Surgeons, New York; Department of Psychology, New York University; Bronx High School of Science; Sir Edward Hallstrom, Taronga Park Zoo, Sydney, Australia; Mr. Kenneth L. Slater, Port Moresby, New Guinea; Fitzsimons Snake Park Laboratory, Durban, South Africa; Royal Zoological Society, Dublin, Ireland; Eric J. Phillips, Society of Brothers, Asuncion, Paraguay; Dr. Fred Medem, Instituto Ciencias Naturales, Bogota, Colombia; Dr. José Cei, Instituto de Biologia, Mendoza, Argentina; Dr. Virgilio G. Roig, Jardin Zoologico de Mendoza, Argentina; Count and Countess Ferdinand Czernin, New York; Dr. Carlos Junge, Concepcion, Chile; Zoological Park, Kibbutz, Urim, Israel; Fleay's Fauna Reserve, Queensland, Australia.

Our King Cobras that had mated three years in a row failed to produce eggs in 1958. A single young from the 1957 brood is still in the collection and is exhibiting remarkably rapid growth. At the end of its first year it measured exactly five feet in total length. The pair of African Pythons raised here since their hatching in 1951 mated and produced eggs but all of them spoiled.

As a result of the pressure of administrative responsibilities the research and educational activities of the Curator were greatly re-

duced. The field study on snakes of the Mianus Gorge area was pursued on several weekends and a short article on part of this work was published in *ANIMAL KINGDOM*. Miscellaneous observations were recorded on the growth, behavior and habits of reptiles in captivity. The Reptile Club, which had met in the Zoological Park for four years under the guidance of the Curator, has transferred its activities elsewhere and is now operating under the sponsorship of several high school biology teachers. Dr. Oliver acted as judge for the Science Fairs held at a Scarsdale school and for Westchester County in White Plains.

Dr. Oliver attended the annual meeting of the American Society of Ichthyologists and Herpetologists in Bloomington, Indiana. As a member of the Board of Governors of this organization, he was Chairman of a special committee for the publication of the society's journal. He also was invited to present a paper at the Darwin Centennial meeting of the Society for the Study of Evolution and the Society of Vertebrate Paleontology in Ann Arbor, Michigan. His paper dealt with "Darwin's Contribution to Zoogeography." The Curator also gave a special lecture to the Natural History Class of Adelphi College and spoke to the Suffolk County Garden Club at Stonybrook, New York. He was interviewed on the CBS radio show, "This is New York," appeared on the television show "To Tell The Truth" and, with Drs. Osborn and TeeVan, on "New York Calendar."

Dr. Oliver's book, "Snakes in Fact and Fiction," was published by the Macmillan Company in May. He also wrote articles for the *World Book Encyclopedia* and the *American Peoples Encyclopedia Yearbook*. The following articles were published in *ANIMAL KINGDOM*: "The Taipan, Australia's Deadliest Snake" and "The Not-so-frightful Copperhead."

CENSUS OF REPTILES AND AMPHIBIANS

December 31, 1958

<i>Orders</i>		<i>Species</i>	<i>Specimens</i>
AMPHIBIA			
CAUDATA	Salamanders	7	8
SALIENTIA	Frogs and Toads	15	24
REPTILIA			
TESTUDINES	Turtles	61	107
CROCODILIA	Alligators and Crocodiles	16	55
RHYNCHOCEPHALIA	Beakheads	1	1
SQUAMATA			
SAURIA	Lizards	28	55
SERPENTES	Snakes	91	128
VARIOUS ORDERS	Research Specimens	145
	TOTALS	219	523

Summary: Orders, 6; Species, 219; Specimens, 523.

COMBINED CENSUS

December 31, 1958

	<i>Species</i>	<i>Specimens</i>
Mammals	169	482
Birds	643	1,689
Reptiles and Amphibians	219	523
Totals	1,031	2,694

ANIMAL HOSPITAL

LEONARD J. GOSS, *Assistant Director & Veterinarian* (to April 25)

CHARLES P. GANDAL, *Veterinarian* (since April 25)

AFTER SERVING as Veterinarian of the Zoological Park for nearly nineteen years, Dr. Leonard J. Goss resigned on April 25 to become Director of the Cleveland Zoological Park. During his long practice here he became recognized as an outstanding authority on the diseases of zoo animals, and the procedures, techniques and supervision he exercised over our collection have set a high standard whose influence will be felt for years to come.

Dr. Charles P. Gandal, who became Assistant Veterinarian on January 1, 1952, and Associate Veterinarian on January 1, 1956, became Veterinarian on the departure of Dr. Goss.

A protracted series of experiments was begun with an injection gun which fires a syringe accurately up to about 90 feet. Although it is not invariably reliable—in part because of incomplete knowledge of required dosage—it is a most promising instrument for medicating sick animals as well as for anesthetizing or tranquilizing animals that must be handled.

Experiments were continued on the effectiveness of various tranquilizing drugs, especially in ruminants. Injection by the gun method was generally unsatisfactory because of the difficulty of getting a high concentration of the drug, but it was found that if the animal could be restrained manually until an intravenous injection could be given, the drugs were markedly effective.

Refinements were made in surgical technique and anesthesiology in birds. More than 150 birds were anesthetized, the majority of them parakeets from which tumors were removed in a continuing study of this common condition. Intravenous use of an avian anesthetic (Equithesin) was found satisfactory in the larger species and resulted in smoother induction and recovery than with intramuscular injection. A resuscitation apparatus was devised for birds of duck and goose size and proved to be effective on the several occasions when it was required.

Several changes were made in feeding practices for improvement of diet and greater economy. Anthropoids were placed on powdered skim milk instead of their accustomed whole milk, in an effort to reduce their caloric intake. Increased roughage was given to many of the ruminants, with a consequent saving in grain. Additional hay racks

were installed on the ranges. The grain formula was modified by the increase by 2 per cent. of molasses, which appeared to enhance palatability and reduced waste.

A thoroughgoing program of preventive medicine was instituted and 301 laboratory tests were performed, including blood tests, tests for internal parasites and for bacterial and fungus infections. A technique was adopted for determining the sensitivity of an infectious agent to various antibiotics. This test permits determination of the antibiotic of choice for a specific infection.

A few patients during this year were of special interest: The Tuatara underwent a third attack of "shock syndrome," and recovered following administration of oxygen. A young Reindeer suffered a serious foot injury the previous year, and on recurrence the foot showed marked lateral rotation. The phalanges were realigned and set in a plaster cast and a satisfactory outcome was achieved after six weeks. The one Chinese Water Deer buck in the collection suffered a severe compound fracture with concurrent osteomyelitis and it was decided to amputate the leg to preserve the animal for future use. The operation was successful and the deer made satisfactory recovery, although subsequently several males were born and the buck's services were not needed. The Leighton intramedullary pin was successfully used in repairing a fractured ulna in a Herring Gull. Experiments have been undertaken regarding the practicality of a spring type of intramedullary pin in birds.

The two Adelie Penguins remaining out of four received in 1957 and two Puffins out of twelve that had not succumbed to aspergillosis were given 17 days of intensive treatment against the disease, by injection and inhalation, using Mycostatin and Amphotericin B. Nine months following cessation of treatment one of the Adelies died of an advanced case of aspergillosis.

Important losses by death were few but severe. Two of the three Platypuses in the collection—the male, Paul, and a female named Patty—died late in the year after they had been taken indoors for the winter. Autopsy revealed little, if any, predisposing cause of death and it must be supposed that psychogenic factors were at least partly responsible, although the utmost in efforts was made to modify the conditions of their winter quarters to satisfy their requirements. Both animals were examined after death by Dr. Jacques Wallach, pathologist at Abraham Jacobi Hospital. The brains were given to Dr. Charles Noback of the College of Physicians and Surgeons, and hearts were sent to Dr. Raymond Truex of the Hahnemann Medical College in Philadelphia for a study of their intrinsic conduction system.

Both young Mountain Gorillas received late in the fall from the Belgian Congo succumbed around the turn of the year to peracute virus infection of the lungs, the female on December 24 and the male on January 2, 1959.

Autopsy of a Bactrian Camel that died following a long period of senility revealed excellent healing of a bilateral fracture of the mandible. This fracture had been repaired in 1948 by Dr. E. P. Leonard, head of the Cornell University Veterinary College Small Animal Clinic, who had used intramedullary pins.

HOSPITAL IMPROVEMENTS. The laboratory was equipped with new desks, stainless steel drain boards were installed in the surgery, shift doors and wire floors were added to two of the smaller holding cages, and a concrete outdoors autopsy platform was built.

PUBLICATIONS, MEETINGS AND LECTURES. The following papers were published in 1958:

A Practical Method of Obtaining Blood from Anesthetized Turtles by Means of Cardiac Puncture. By Charles P. Gandal. *Zoologica*, Vol. 43, No. 7.

Comparative Liberation of Bound Phosphatides from Red Cells of Man, Ox and Camel. By Joseph C. Turner, Helen M. Anderson & Charles P. Gandal. *Proc. Soc. Exptl. Biol. and Med.*, Vol. 99, pp. 547-550.

Species Differences in Red Blood Cell Phosphatides Separated by Column and Paper Chromatography. By Joseph C. Turner, Helen M. Anderson & Charles P. Gandal. *Biochimica et Biophysica Acta*, Vol. 30.

The Morphology of *Renicola philippinensis*, n. sp., a Digenetic Trematode from the Pheasant-tailed Jacana, *Hydrophasianus chirurgus* (Scopoli). By Horace W. Stunkard, Ross F. Nigrelli & Charles P. Gandal. *Zoologica*, Vol. 43, No. 9.

Dr. Goss made numerous lung sections available to the authors of "Evaluation of Pulmonary Megakaryocytes," published in the *Archives of Pathology*, Vol. 66, pp. 176-182.

Dr. Gandal presented a paper on "Surgical Removal of Subcutaneous Tumors in Parakeets" at the annual conference of the American Veterinary Medical Association, and the accompanying motion picture of the technique was shown both at the general and the poultry sessions. He addressed the Zoological Park Veterinarians' group on "Induced Cranial Hemorrhage in Pigeons."

Dr. Gandal also addressed the Westchester Veterinary group on "The Care and Treatment of Unusual Animals," the Mt. Vernon Medical Group on "The Practice of Zoo Veterinary Medicine," participated in a panel at a meeting of the New York City Veterinary Society, where he discussed avian anesthetics and demonstrated the use of Equithesin, and attended the annual Cornell Veterinary Conference, the American Veterinary Medical Association conference and the New Jersey State Veterinary Association annual meeting.

Dr. Goss attended a meeting of officers and directors of the American Association of Zoological Parks and Aquariums.

APPOINTMENTS. Dr. Gandal served as publicity chairman for the Westchester County Veterinary Medical Society.

Dr. Goss was appointed Scientific Advisor to the Ellin Prince Speyer Animal Hospital and Medical Center.

COOPERATING INSTITUTIONS. A total of 166 specimens was sent to cooperating institutions, in addition to participation in various investigations.

MISCELLANEOUS. The Zoological Park's First Aid Service handled 2,204 cases. Zoo employees furnished 21 pints of blood to the Red Cross Blood Bank, all of which was used in transfusions for six employees or members of their families.

Birds and mammals hospitalized numbered 95 for a total of 5,245 days. Outpatient treatments included 370 mammals, 104 birds and 31 reptiles.

In the mortality tables that follow, "Total in Collection" is arrived at by adding to the census at the beginning of the year all animals acquired by purchase, exchange, gift or born alive. Animals disposed of alive by sale or exchange during the year are not deducted. No acclimatization period following birth or arrival is allowed.

MORTALITY TABLE

MAMMALS

<i>Year</i>	<i>Total in Collection</i>	<i>Died</i>	<i>Mortality Percentage</i>
1958	545	117	21.46
1957	679	130	19.14
1956	672	129	19.19
1955	716	131	18.30
1954	737	110	14.92
Totals	3,349	617	
	Average mortality for past 5 years		18.42
	Average mortality for past 20 years		18.57

BIRDS

<i>Year</i>	<i>Total in Collection</i>	<i>Died</i>	<i>Mortality Percentage</i>
1958	1,713	348	20.31
1957	1,870	309	16.52
1956	1,803	264	14.64
1955	1,830	316	19.50
1954	1,450	278	19.17
Totals	8,666	1,515	
	Average mortality for past 5 years		17.48
	Average mortality for past 20 years		16.52

PUBLICATION AND PHOTOGRAPHY

WILLIAM BRIDGES, *Curator*

DOROTHY REVILLE, *Publications Assistant*

SAM DUNTON, *Photographer*

HENRY M. LESTER, *Photographic Consultant*

TWENTY-SIX LARGE PHOTOGRAPHIC ALBUMS containing prints of all our bird negatives have now been completely made over: new prints, fuller identifying labels, rearrangement in strict zoological order. It has taken three years to do the job, for many copy negatives had to be made when the originals had deteriorated and information about certain of the pictures had to be dredged out of the memory of General Curator Emeritus Crandall or early records and publications. But the work is finished as far as the birds are concerned, and we have now started on a similar—and longer—task in the mammal albums.

The plan and execution of this job, of first importance as far as photographic records is concerned, were the sole responsibility of Mrs. Reville and future generations of searchers of the albums will be grateful to her.

About 450 new black-and-white negatives and color transparencies were added to the collection in 1958. Some 400 prints were sold for publication and reference, a decline in orders attributed to a new and higher scale of charges for pictures. Our rates are now more nearly in line with those of other institutions than they have been for a long time.

Mr. Dunton produced two new motion picture films, both more than one reel long. One was the usual "Around the Year at the Zoo" film for showing at the Society's mid-winter Members' meeting, the other a quickly made but excellent film on attractions at the Aquarium. Further sequences were made of parakeet tumor operations by Dr. Gandal, to complete a 1-reel picture made in 1957. Mr. Dunton covered a seining operation for white whales at Tadoussac in Canada but the footage was not used because capture was never made.

Our photographer's book of photographic experiences, "Hold that Tiger!" was published in England and one chapter was reprinted in *Pageant Magazine*. *This Week* magazine and *Turtox News* published Dunton pictures as covers.

Photographic Consultant Henry M. Lester again came to the department's rescue with specialized information about various photo-

graphic problems. Through the Zoomar Corporation he arranged the loan of a 20-inch telephoto lens and a 35 mm. Praktina camera with a 50 mm. lens. The Zoomar Corporation adapted its 20-inch lens to our Cine Kodak Special motion picture camera.

In the darkroom, Mrs. Castora completed her eighth year as photolab technician and assisted materially in still photography on occasions when complete coverage of an event required both stills and motion pictures.

In the Printshop, Mr. Larsen printed 369 plastic labels, thus completing transition of Mammal Department labelling from cardboard to the much longer-lived plastic. We are now starting a similar job for the Bird Department. Little time was left for routine form printing, but 74 jobs were completed, with 23,000 impressions.

Six numbers of ANIMAL KINGDOM were published, the 1957 ANNUAL REPORT was issued, ZOOLOGICA was published in quarterly parts totaling 162 pages, and several promotional jobs were designed and seen through the press for the Membership Department.

DEPARTMENT OF EDUCATION

HERBERT J. KNOBLOCH, *Associate Curator*

MARION P. MCCRANE, *Assistant*

JANET L. STONE, *Assistant*

BEING NO EXCEPTION, 1958 was another year for establishing records. The number of schools and organizations and school-group attendance figures are both new records. The totals for the year are:

Schools and Organizations	3,140
Classes and Organized Groups	3,932
Total School/Group Attendance	172,501

May, typically our best month for attendance by school classes and other organized educational groups visiting the Zoological Park and the Farm-in-the-Zoo, also again set a new record. The class and organized group figure is both a new high for May and also for any one-month period in the history of the Park. The other two totals for May, though not record-breaking, nevertheless are near-record figures and exceptionally high considering the long run of generally bad weather throughout the month. The totals for June are comparatively low for this particular month due to the continued bad weather, the one-day

employee walkout on Tuesday, June 10, and the four-day strike against the City when the Park was closed from the morning of June 14 through the evening of June 17. The totals for May and June are:

	<i>May</i>	<i>June</i>
Schools and Organizations	1,145	653
Classes and Organized Groups	1,549	831
Total School/Group Attendance	62,897	33,751

VISUAL AIDS. Assisting the Department of Publications and Photography, the Education Department again helped produce several more motion pictures.

"Africa the Biggest Zoo," created by our associate producer Evan J. Anton Productions, Limited, in cooperation with us, from the remaining Saul Blickman African safari footage, was turned over to McGraw-Hill Text Films early in the year for distribution.

Our motion picture films were mailed out on 140 rental orders and were seen by 17,928 persons. Staff officers used them in lectures 29 times and they were seen by some 3,290 persons. Films were loaned 13 times for special showings to 1,320 persons. There were four requests for previews.

GUIDED TOURS. Eighty-seven guided tours of the Zoological Park and Farm-in-the-Zoo were conducted for 3,221 students. Many of these tours were for handicapped, blind or otherwise special groups. Three behind-the-scenes tours were conducted for 23 Members and their guests, apart from the scheduled Saturday morning Members' tours during the spring and fall.

SCHOOL LECTURE SERVICE. Illustrating her lecture programs with live animals, Miss Marion McCrane visited 83 schools, institutions and organizations and gave 210 talks to 39,667 pupils.

LECTURES. Department members made 11 appearances on television, participated in one radio program and gave 17 lectures, addressing some 1,550 persons.

QUESTION HOUSE. The Question House opened on April 27, and closed on the evening of Veterans' Day, November 11. There were 47,258 visitors. Inquiries may be summarized thus:

Miscellaneous Animal Questions	4,784
Questions requiring research	43
Platypus questions	625
Directional questions	2,797
	<hr/> 8,249

PERSONNEL. Miss Janet L. Stone joined the staff of the department on June 18.

MISCELLANEOUS. On Saturdays during May and June, New Haven Railroad "Zoo Trains" brought 5,396 visitors from various points in New England. The last excursion of the spring, scheduled for Saturday, June 14, with an estimated 1,700 passengers, was cancelled because of the strike.

Mr. Knobloch again served as chairman of the Zoological Park Safety Committee.

The 17th and 18th In-Service courses for elementary and high school teachers, "Utilization of the Bronx Zoo in the Science Program of Elementary and Secondary Schools," were given during the spring and fall school terms. Mr. Knobloch continued to supervise the courses for the Zoological Park and to act as Board of Education coordinator and instructor. The number of teachers attending the 17th course in the spring was the largest we have had. Ninety-four of the original 100 registrants satisfactorily completed the course.

In April Dr. Oliver and Mr. Knobloch assisted in the judging of Science exhibits constructed by junior and senior high school students at the third Westchester County Science Fair.

CONSTRUCTION AND MAINTENANCE

CHARLES B. DRISCOLL, *Superintendent*

GEORGE RUSSELL, *Assistant Superintendent of Construction*

WILLIAM ALLEN, *Assistant Superintendent of Maintenance*

THE MOST EXTENSIVE construction project in 1958 was the interior alteration of the Monkey House, for which work was substantially completed by the end of the year. The building contains 20 glass-fronted exhibit units, eight with electric glass. Each cage is controlled for heat, ventilation and humidity. The entire job was designed, contracted and supervised by the Society.

Two major projects designed and supervised by the Park Department were completed. The Antelope House roof and lower sections of the Elephant House roof were covered with standing seam copper and new skylights were installed. In the other project, the Bronx River Dam at the Boathouse was repaired and six inches were added to the crest to provide deeper water for boating.

Park improvements designed, contracted or undertaken by our forces were the rehabilitation of the Marsh Garden pond; resurfacing 1,700 sq. yds. of pavement; converting the 3½ acres of wooded area

east of the Monkey House to a new Elk Range; repairs to the west side cages of the Bird House; new Llama and Turkey shelters built; offices of the Curators of Mammals and Birds and the northwest room of the Lion House remodeled; approximately 1,700 feet of new fence installed around the Wild Fowl Pond; new fence work at the Yak House and a new perimeter corral fence at the new Elk Range.

Smaller but important jobs were performed by the shops, such as provision of new electric service to the Hospital and Rainey gate; a new 2,000-gallon oil tank installed at the Elephant House; a new concrete autopsy platform laid at the Hospital; re-thatching of the African Plains granary and repairs to the Lion Island moats; a new boiler room for the Paint shop; 11 new temperature recorders for animal buildings; new leaching field at the Farm; new water service to the Heads & Horns Museum; 719 Restaurant tables and chairs repainted; the interior of the Lion House, Bird House cages, Farm apartment and Zebra House repainted; repairs made to African Terrace; and exhibits prepared for the Annual Meeting.

Landscape and tree work performed by the Maintenance Department included the removal of 280 dead trees; replanting of the west side of Fountain Circle, the border of the Children's Zoo and the interior of the Flying Cage; and grading and seeding of the area east of the Monkey House for an Elk Range.

There are now 1,207 American elm trees in the Park grounds. In a Dutch elm disease survey made in November, 83 infected trees, including three on Baird Court, were found. This indicates a loss of 6.6% in the entire Park and 4.4% in the Baird Court area. Despite controls, the disease is spreading rapidly and causing great concern, especially since there are 68 fine elms on Baird Court and along the Concourse entrance and they are planted in close proximity to each other.

FACILITIES DEPARTMENT

EDWARD KEARNEY, *Manager*

EDWARD QUINN, *Assistant Manager*

TWO YEARS AGO it was noticed that sales at the Zoobar Restaurant were not as good as in the previous year. After studying all aspects of the situation, including customer preference for certain types of dishes, it was decided to completely revamp the menu. A new and

colorful menu was prepared, featuring a combination luncheon for adults, three special combinations for children and half-priced meals for children. All dishes featured were carefully chosen, especially prepared and moderately priced. We believe that the new merchandising method had a great bearing in attracting approximately 66,000 guests to this restaurant.

Automatic merchandising equipment is doing a good job of providing services to visitors at the Farm-in-the-Zoo. The quantity of refreshments dispensed was: 7,274 ice cream pops, 6,750 bars of candy, 4,041 containers of milk and 4,076 servings of soft drinks. In addition 27,762 five-cent bags of animal food pellets were sold.

At the season's end souvenir sales were about 7% higher than in 1957. The sale of inflated balloons fell off considerably because of the short supply of helium.

The Animal Food Vending Machines in the park still do a good selling job of animal food pellets. Last year 304,719 five-cent bags were vended. Fish fed to the animals at the Sea Lion Pool reached a total of 40,178.

With only 50 row boats in operation at the Boathouse, the revenue was nevertheless considerably greater than in the previous year.

COMPTROLLER'S DEPARTMENT

HERBERT F. SCHIEMANN, *Comptroller*

SEVERAL YEARS AGO when we reported the installation of accounting practices which then were relatively modern, we had reason to believe that such systems would suffice for a considerable number of years. However, when the Society began to operate the New York Aquarium, increased office work made apparent the need for accounting machine methods.

After investigating the accounting machines available, we decided that the Burroughs Sensimatic 1500 Accounting Machine would satisfy our requirements. This is a compact, uncomplicated combination of accounting machine and typewriter which is programmed to perform eight different and complete accounting functions. Each program can be selected instantly. Additional programs can be added.

Under one program we prepare payroll checks or notices, record the employees' earnings records and write the payroll journal, all at one time. A second program covers the preparation of vouchers,

writing the Voucher Register and posting to the General Ledgers. A third program governs the drawing of checks and writing the Cash Disbursements Record while a fourth program enables us to post and summarize our Facilities sales.

Altogether, we have planned quite an ambitious role for our Burroughs Sensimatic, and we believe that careful programming of accounting work and close supervision of office routines will insure the efficiency now required to perform the many functions of our growing office.

We are thankful for the loyal and efficient services rendered by the employees of this Department. We know we can rely on their cooperation while we further the machine installation during the months ahead.

MISCELLANEOUS OPERATIONS AND SERVICES

CHILDREN'S ZOO. The Children's Zoo finished its eighteenth year of operation on November 11 with an excellent attendance record, even though bad weather, especially during the spring, seriously curtailed its operation. To date, 5,306,270 visitors have enjoyed it.

RIDING TRACKS. Rides given on the combined tracks totalled 317,412 as against 299,898 in 1957. There were 172,105 pony rides, 114,816 camel rides and 30,491 donkey and cart rides. Gross income from the tracks was the second lowest in ten years—yet the net income was the highest in five years. Much credit for the excellence of this operation is due to Riding Track Master Frank Beehn.

TRACTOR TRAINS. The seven trains carried 632,448 passengers, as against 656,873 the previous year.

FARM-IN-THE-ZOO. The Farm-in-the-Zoo was open from April 5 to October 14 under the superintendency of James Coder. Attendance was 87,767, including 18,376 children admitted free in organized groups. Attendance was the third highest in its history, and paid attendance was the second highest, despite closing six weeks earlier than usual. New exhibits included models of farm machinery donated by the John Deere Company, a food production display panel set up by the GLF Company and several attractive photomurals of farm machinery in action. A new turkey shelter facilitated display of various breeds of turkey in a range-type exhibit.

Twenty-eight dozen fertile eggs were supplied to local schools for use in science fairs and science class projects. During the year the farm produced 99 pounds of wool, 905 pounds of poultry, 1,050 pounds of lamb, 1,650 pounds of pork and 1,110 dozen eggs.

CENSUS OF FARM LIVESTOCK

December 31, 1958

Donkey	1
Belgian Horse	1
Hogs	4
Sheep	12
Goats	7
Geese	25
Ducks	24
Turkeys	13
Chickens	119
Guinea Fowl	6
Pigeons	68
Total.....	280

THE AQUARIUM

CHRISTOPHER W. COATES, *Director*

JAMES W. ATZ, *Associate Curator*

CARLETON RAY, *Assistant to the Director*

ROSS F. NIGRELLI, *Pathologist*

MYRON GORDON, *Geneticist*

AAGE OLSEN, *Superintendent*

AS THE FIRST quasi-public institution in New York to be operated on a self-supporting basis, with admission charged every day except to school groups, the New York Aquarium's first full year of operation has been an interesting and enlightening one. Total attendance was 226,942, of which about 31,000 were school children. We confidently expect that the use made of the Aquarium by schools will grow enormously. Indeed, there were many times during the past year when the hall space and facilities were taxed by the influx of eager children, and we look forward to the expansion of the exhibition areas so we can properly accommodate the peak crowds.

Attendance by non-school visitors, on which the Aquarium must rely for its operating expenses, was seriously affected by the summer's wet weather. This, however, is a factor that we must learn to live with—as must every institution in a similar situation—and it is a measure of the Zoological Society's confidence in the potentialities of our exhibit that at the year's end positive plans were being made for enlargement of exhibits and solution of certain technical problems in 1959. Chief among these latter is a deep-well source for our sea water and there is reason to believe that from wells we can get more and much clearer sea water than we are now able to get from the generally unsatisfactory well-point system.

In order to enlarge the exhibits and help relieve the congestion of visitors that quickly builds up in the main hall on busy days, five 300- to 350-gallon exhibition aquaria were constructed in late spring and placed to the east of the building where they are visible from the length of the hall. A sixth aquarium, of 2,000 gallons' capacity, was installed on the path leading to the Penguin Pool to help draw visitors toward the far end of the developed grounds. The appearance and exhibition value of the main hall are being markedly improved by the replacement of the 600-gallon tanks on the north wall with new 1,000-gallon tanks. At the same time the broad mullion that splits the view of each tank is being removed. The new tanks embody a design de-

veloped by Director Coates in 1946. Two of the new tanks have already been installed and have proved such a boon to fishes, visitors and tankmen alike that the remaining three will be replaced as soon as possible. Other construction included a sunshade for the Seal Pool and several large signs directing automobiles to the Aquarium and describing the mammals in the Oceanic Tank.

Early in the year a policy of charging for parking only on Sundays or holidays during the winter months was adopted. The number of parked cars on weekdays at that season does not justify daily operation of the field. Starting the week of October 5, the Aquarium remained closed on Mondays and Tuesdays except when holidays fell on those days.

EXHIBITIONS. A comparatively small amount of effort was expended on fishes and a relatively large amount put forth on marine mammals. Mortality among the fishes on exhibition and in reserve has been surprisingly low. In part this can be attributed to the basic suitability of the sea water and to the use of chemical prophylaxis in the water systems. Only one major collection was undertaken. Superintendent Olsen made a trip to Bermuda in November and returned with 38 species of fishes and invertebrates. As before, Curator Louis Mowbray of the Bermuda Aquarium and Dr. Henry Clay Frick of the Zoological Society's Board of Trustees rendered invaluable assistance in capturing and assembling these specimens.

The Aquarium is indebted to the Sunrise Fish Company of East Islip, which made possible the collection of interesting local fishes and crustaceans from commercial pound nets off the South Shore of Long Island. Through the courtesy of Mr. Bert Maxon of Belford, New Jersey, other fishes caught in commercial pound nets were obtained. A trip to Prospect Park Lake yielded some freshwater fishes. From dealers and importers were obtained such tropical marine fishes as Round Stingrays, Golden Striped Bass, Imperial Angel Fish, Half-circled Angel Fish, Chocolate Clownfish, Single-barred Pullers, Red-toothed Trigger Fish (*Odonus niger*), a Humu-humu Nukunuku Apu-a-a (*Balistapus aculeatus*), a Shark Sucker and Sargassum Fish. A Grass Octopus from Florida was exhibited for about one month, and another small octopus donated by the Vancouver Public Aquarium was maintained alive for some time, but facilities were lacking to place this cold-water species on exhibition. A satisfactory method of displaying these delicate, shy creatures has yet to be worked out.

From Mr. Paul Montreuil, Director of the Laboratoire de Biologie Marine, Departement des Pêcheries, Quebec, the Aquarium obtained a pair of Gray Seals and four Harp Seals. Three young Harp Seals

were received through the good offices of Dr. Cater Andrews of Memorial University of Newfoundland. In order to obtain Pacific Walruses, Dr. Ray made a trip to Gambell, Alaska, from May 6 to May 30. Through the cooperation of the U.S. Fish and Wildlife Service four nursing youngsters were collected. Mr. Averill Thayer of the Service, stationed at Kenai; Dr. Francis Fay of the Arctic Research Center at Anchorage; and Mr. Winifred James, Eskimo hunter, made this difficult operation possible. The Walruses were successfully transported to New York, but they subsequently died, most likely from a dietary deficiency, lack of resistance and subsequent bacterial infection. Knowledge acquired in this venture will be invaluable in any future attempt to obtain young Walruses.

Three attempts were made to obtain the Beluga or White Whale, a species the Aquarium has not exhibited in more than half a century. From June 23 to 29 and again from August 5 to September 4 Dr. Ray made trips to Alaska. On both occasions, Messrs. James Brooks and C. L. Anderson of the Alaska Department of Fish and Game and Charlie Wilson, an Eskimo hunter of Levelock, were principally responsible for the capture of Beluga. The specimen obtained on the first trip died in transit as a result of unforeseen delays in air transport. Three specimens were collected on the second, two of which are at present on exhibition at Pacific Ocean Park, while the third died nine days after its arrival in New York. Severe gastritis was the cause of death. The animal was an unusually large young-of-the-year, and appeared to be unable to digest the fish that it had eaten voluntarily. From July 15 to July 25 a trip was made to Tadoussac, Quebec, where Dr. Ray found that the Beluga were not close enough inshore to make capture possible. Dr. Gustav Prévost and Mr. Robert Lagueux of the Departement de la Chasse et de la Pêche were most helpful in making the necessary arrangements for the investigation.

RESEARCH. The declaration by the National Cancer Institute of its intent to support the work of the Aquarium's Genetics Laboratory for a five-year period beginning January 1, 1960, marks an important milestone in the Zoological Society's program of research. Since 1947, this member of the National Institutes of Health of the U.S. Public Health Service has granted funds to the Laboratory totaling \$208,300. During the current year, \$17,990 was allotted for operating expenses with an additional \$4,918 for special laboratory equipment, principally microscopes. Under Dr. Gordon's direction, research on Correlated Studies of Pigment and Thyroid Cell Growth proceeds along several fronts, all directed toward an understanding of the life cycle of the pigment and the thyroid cell in health and disease. More than one thousand interspecific and intervarietal crosses of platyfishes and

swordtails have been made since the Laboratory was established twenty years ago. Miss Pamela Alexander, who is responsible for the maintenance of the fishes and their records, is studying the microscopic structure of the gonads and tumors of several hybrids and pure strains in relation to the genetics of sex determination and tumor development. Associate Curator Atz is engaged in morphological and genetic studies of the pigmentary patterns of various xiphophorin fishes and their hybrids. Mr. Klaus D. Kallman has developed a transplantation technique by means of which he has been able to compare the effects of heredity and tissue environment on pigment cells, on sexually dimorphic skeletal structures and on internal organs such as the spleen. In the course of one series of experiments, he made more than 4,000 transplants, involving about 6,000 fish. Drs. M. J. Kopac and Sylvia S. Greenberg are describing the cytochemical and biochemical properties of cells from fish melanomas grown in tissue culture at New York University.

The Genetics Laboratory, located in the Whitney Wing of the American Museum of Natural History, underwent extensive changes, including an increase in the number of aquaria. At present 629 tanks are available for the maintenance and breeding of fishes. The Laboratory occupies these excellent quarters through the courtesy of the Bird Department of the Museum.

Dr. Gordon has nearly completed his editorship of the book, "Pigment Cell Biology," which represents the proceedings of the Fourth Conference on the Biology of Normal and Atypical Pigment Cell Growth held in the fall of 1957. Grants in aid toward publication include \$3,500 from the Damon Runyon Fund for Cancer Research, Inc., \$1,000 from the Anna Fuller Fund and \$500 from the William Heuermann Fund of the University of Texas. The Zoological Society will contribute up to \$500 toward the remainder of the expenses. The book is expected to be published in the spring of 1959. In April Dr. Gordon made a short trip to northeastern Mexico where he collected living specimens of two species of platyfishes at that time unrepresented in the Laboratory. One of these, *Xiphophorus couchianus*, may well be on the way to extinction, since its only known habitat, in the Huasteca Canyon near Monterrey, has been destroyed. Three females and five males were obtained and these have become the foundation stock for the only known strain of this species in captivity.

The discovery of two new species of swordtails has delayed completion of the taxonomic revision of the xiphophorin fishes undertaken by Mr. Donn E. Rosen under Dr. Gordon's direction. Mr. Rosen's study of the systematics of the Family Poeciliidae is approximately three-quarters completed, and it is now clear that current ideas con-

cerning the phylogenetic relationships of the genera within the group require drastic change. This work is being supported by a grant of \$11,186 from the National Science Foundation, covering the period from July 1, 1958, to June 30, 1960.

The Department of Marine Biochemistry and Ecology, under the chairmanship of Dr. Nigrelli, has devoted the major part of its efforts to a study of substances with growth-inhibiting and other antibiotic properties, produced by marine invertebrates. The first of these was Holothurin which was obtained from a sea cucumber, but others, from animals in other Phyla, have also been detected. Holothurin, whose complex chemical structure still evades complete description, has been found to act as a powerful blocking agent for nerve impulses. Drs. S. L. Friess and E. R. Whitcomb of the National Institute of Neurological Diseases and Blindness have been responsible for this phase of the biological, as contrasted with the biochemical, approach to an understanding of this potent substance. Another phase, which uses the developing egg of the Sea Urchin, *Arbacia*, as an analytic tool, has been intensively developed in the Aquarium's laboratory by Mr. George D. Ruggieri, S.J., as his doctoral thesis. The isolated hearts of the cricket and cockroach have also proved useful in testing the biological properties of Holothurin. Dr. Kathleen Marie Tracey, S.C., College of Mount St. Vincent, is performing this work.

From the Office of Naval Research a grant of \$10,000 has been received to carry on the biochemical analysis of Holothurin from May, 1958, until December, 1959.

The discovery by Drs. Nigrelli and Jakowska that practically all Anglers (*Lophius americanus*) of intermediate size are afflicted with a microsporidian parasite presented an opportunity to determine biochemical changes associated with disease. This parasite, which belongs to the protozoan genus *Glugea*, is intracellular. It produces a self-limiting disorder of the nervous system; larger Anglers exhibit no parasites but scarring and regeneration of affected nerve cells instead. Dr. Jakowska is comparing the amino acid content of healthy and diseased nervous tissue by means of paper chromatography.

With Dr. William Antopol, Director of Laboratories at the Beth Israel Hospital of New York, Drs. Nigrelli and Jakowska have initiated two programs of research on the effect of changes in atmospheric pressure on amphibians and air-breathing fishes and the effect of infectious agents on the development of cold-blooded aquatic vertebrates.

Small doses of copper have been found to be the most effective prophylactic and therapeutic agent for many of the parasites that attack marine fishes. Copper is also poisonous to fishes, however, and

the difference between an effective and fatal dose is only one or two parts per ten million. For these reasons the laboratory's technician, Mrs. Idalisa Calventi, has undertaken an extended study of the physiology of sub-lethal doses of copper in fish.

Investigations by Director Coates and Dr. David Nachmansohn on the physiology of the Electric Eel have provided basic information and biochemical material essential for the synthesis of a remarkable new drug which protects human beings against the incredibly lethal nerve gases and certain insecticides. The drug, PAM (pyridine aldoxime methiodide), was first designed on paper and then synthesized by Dr. Irwin B. Wilson, who utilized theories and data that had been slowly accumulating as a result of experiments on various animals, especially the Electric Eel.

Substantial progress was made in the chemical isolation of the protein-receptor from electric tissue, in the mapping of pathways of intermediary metabolism and in the use of the isolated single electroplax from the eel's electric organ. These projects were first reported last year. A new project whose purpose is to describe the phospholipids in the eel's electric tissue has been initiated by Mr. Harry Dougherty. All of this work was carried out at the College of Physicians and Surgeons of Columbia University.

COLLABORATION. Advice was provided on the planning of aquariums for the cities of Toronto, Leopoldville and Luanda and the Cities Service Trafalgar Aquarium. Data on tank construction were given to the Nanaimo Biological Station of the Fisheries Research Board of Canada and the School of Veterinary Science of the University of Queensland in Brisbane. The Department of Zoology of the University of Maryland and the Johns Hopkins Medical School received special strains of fishes from the Genetics Laboratory. To the Institute Oceanographique of Monaco went two adolescent California Sealions and two young Atlantic Harbor Seals. Horseshoe Crabs were sent to the Royal Zoological Society of Antwerp and the Zoological Garden at Frankfurt am Main.

From the Thompson Brothers Boat Manufacturing Company the Aquarium received an 18-foot power boat and from the Evinrude Corporation two 35-H.P. outboard motors. These were used by Dr. Nigrelli in the collection of specimens and samples of plankton.

Close cooperation with the Department of Marine and Aviation, New York City; the Federal Security Agency, Pure Food and Drug Administration; the Department of Health, New York City; the Fish and Wildlife Service, Department of the Interior; and the Conservation Department, State of New York, has been maintained.

Collaborators working with the Aquarium during the year were:

- DR. SOPHIE JAKOWSKA, College of Mount St. Vincent, New York.
DRS. DAVID NACHMANSOHN, IRWIN B. WILSON, SEYMOUR EHRENPREIS, RONALD WHITTAM, MAXIME GUINNEBAULT, FRANCIS C. G. HOSKIN AND MR. HARRY DOUGHERTY, Department of Neurology, College of Physicians and Surgeons, Columbia University.
DR. ERNEST SCHOFFENIELS, University of Liège and Department of Neurology, College of Physicians and Surgeons, Columbia University.
DRS. HARRY A. CHARIPPER AND MILAN J. KOPAC, New York University.
DR. ELI D. GOLDSMITH, New York University Dental College.
DR. AUBREY GORBMAN, Barnard College, Columbia University.
MISS FRANCESCA R. LAMONTE, DRS. CHARLES M. BREDER, JR., LESTER R. ARONSON, T. C. SCHNEIRLA, HORACE W. STUNKARD AND ARLENE F. TUCKER, American Museum of Natural History.
DRS. DANIEL MERRIMAN AND GRACE E. PICKFORD, Bingham Oceanographic Laboratory, Yale University.
DRS. CARYL P. HASKINS, SEYMOUR HUTNER, PAUL A. ZAHL, LUIGI PROVASOLI AND JOHN J. A. McLAUGHLIN, Haskins Laboratories, New York.
DRS. HARRY SOBOTKA, J. D. CHANLEY AND HERMAN BAKER, Department of Chemistry, Mount Sinai Hospital, New York.
DRS. S. L. FRIESS AND E. R. WHITCOMB, National Institute of Neurological Diseases and Blindness, Bethesda, Md.
DR. WILLIAM ANTROPOL, Beth Israel Hospital, New York.
DR. SYLVIA GREENBERG, Damon Runyon Memorial Fellow, New York University.
DR. K. FRANCE BAKER COHEN, Department of Biochemistry, College of Physicians and Surgeons, Columbia University.
DR. ALFRED PERLMUTTER, Bureau of Marine Fisheries, State of New York Conservation Department.
DR. ARNOLD H. SPARROW, Brookhaven National Laboratory.
DR. DOUGLAS G. HUMM, University of North Carolina.
DR. NEZIHE ÖZTAN, University of Istanbul.
DRS. REEVE M. BAILEY AND ROBERT R. MILLER, Museum of Zoology, University of Michigan.
DR. WALTER CHAVIN, Wayne State University.
MORTON PADNOS, Waldemar Medical Research Institute, Port Washington.
GEORGE D. RUGGIERI, S.J., St. Louis University.
DR. MARVIN WEINSTEIN, Schering Corp., Bloomfield, N. J.
DR. STEVEN CARSON, Endo Pharmaceutical Company, New York.

Dr. Nigrelli conducted his course on fish diseases at the Graduate School of Arts and Science of New York University. Under his sponsorship, Steven Carson received the degree of Doctor of Philosophy.

PUBLICATIONS. The following scientific and popular articles by members of the staff appeared during the year:

MR. COATES

"Bumble Bee" Fish Paragon of Virtues *Brachygobins doriae* (Guenther). *Fish Culturist*, Vol. 37, No. 6, p. 44.

Sardines and Sardine Fisheries. *Encyclopedia Americana*, Vol. 24, p. 298.

My Favorite Fish. *Marco News Releaser*, Vol. 1, No. 2, 2 pp.

- Pets from Tropical Waters. Pp. 2854-2865 of "The Illustrated Library of the Natural Sciences" edited by Edward M. Weyer, Jr. Simon and Schuster, New York.
- Vestiges of Air Sac Turned to Handy Use. *Fish Culturist*, Vol. 38, No. 3, p. 17.
- Olaf: 1,000 Pounds of Walrus Charm. With James W. Atz. *Animal Kingdom*, Vol. 61, No. 3, pp. 66-72.
- Record and Measurements of a Leatherback Turtle from the Gulf of Maine. With Carleton Ray. *Copeia*, Vol. 1958, No. 3, pp. 220-221.
- A Case of Poisoning by the Lion Fish, *Pterois volitans*. With Carleton Ray. *Copeia*, Vol. 1958, No. 3, p. 235.
- Weekly column on tropical fish in the *New York World-Telegram and Sun* continued for twenty-eighth year.

MR. ATZ

- Now Fishes Come in Plastic Bags. *Animal Kingdom*, Vol. 61, No. 1, pp. 27-28.
- New York's Nya Akvarium. *Akvaret*, Vol. 32, No. 3, pp. 36-39.
- In a Nutshell. *Aquarium Journ.*, Vol. 29, No. 3, pp. 87-93, 114.
- The Longfin Pompano—Common but Rare. *Animal Kingdom*, Vol. 61, No. 5, pp. 142-143.
- Man's View of the Animals. *Natural History*, Vol. 67, No. 8, pp. 412-413, 463.
- Fishes in Plastic Bags. *Aquarium Journ.*, Vol. 29, No. 11, pp. 403-409.
- A Mouthful of Babies. *Animal Kingdom*, Vol. 61, No. 6, pp. 182-186.
- New York's New Aquarium. *Our Pet World* [N. Y.], Vol. 1, No. 1, pp. 35-37.
- Oral Incubation in the Cichlid Fish *Geophagus jurupari* Heckel. With Melvin J. Reid. *Zoologica*, Vol. 43, Pt. 3, pp. 77-88.

DR. RAY

- Vital Limits and Rates of Desiccation in Salamanders. *Ecology*, Vol. 39, No. 1, pp. 75-83.
- The Exuma Cays Park Project. *Animal Kingdom*, Vol. 61, No. 2, pp. 34-39.
- Bahamian Land-and-sea Park. With John E. Randall. *Sea Frontiers*, Vol. 4, No. 2, pp. 72-80.
- "The Underwater Guide to Marine Life." With Elgin Ciampi. Nicholas Kaye Ltd., London. xiii + 338 pp.
- Under-sea National Parks. With John E. Randall. *Frontiers*, Vol. 23, No. 2, pp. 44-46.

DR. NIGRELLI

- Dutchman's Baccy Juice or Growth-promoting and Growth-inhibiting Substances of Marine Origin. *Trans. N. Y. Acad. Sci.*, Ser. II, Vol. 20, No. 3, pp. 248-262.
- A Perfect Host—the Sucker Catfish and His Uninvited Guests. With Sophie Jakowska. *The Aquarium*, Vol. 27, No. 4, pp. 108-113.
- The Morphology of *Renicola philippinensis*, n. sp., a Digenetic Trematode from the Pheasant-tailed Jacana, *Hydrophasianus chirurgus* (Scopoli). With Horace W. Stunkard and Charles P. Gandall. *Zoologica*, Vol. 43, Part 3, pp. 105-112.
- Histozoic Algal Growth in Fish. With J. J. A. McLaughlin and Sophie Jakowska. *Copeia*, Vol. 1958, No. 4, pp. 331-333.

- Radiobiology of the Newt, *Diemictylus viridescens*. Hematological and Histological Effects of Whole-body X Irradiation. With Sophie Jakowska and Arnold H. Sparrow. *Zoologica*, Vol. 43, Pt. 4, pp. 155-160.
- Dutchman's Baccy Juice. *World Science Rev.*, Jan. 1958, pp. 25-26. Abstract.
- The Effect of Holothurin, a Steroid Saponin of Animal Origin, on the Development of the Fruit-fly. With E. D. Goldsmith and Helen E. Osburg. *Anat. Rec.*, Vol. 130, No. 2, pp. 411-412. Abstract.
- Preliminary Biochemical Studies on Neurotropic Microsporidial *Glugea*-cysts in the American Anglerfish. With Sophie Jakowska. *Journ. Protozoology*, Vol. 5, Suppl., p. 16. Abstract.
- Radiobiology of the Common Newt, *Diemictylus viridescens*. Hematological and Histological Effects of Whole-Body X-irradiation. With Sophie Jakowska and A. H. Sparrow. *Quart. Progress Rpt. Brookhaven Nat'l Lab.*, April 1—June 30, 1958, p. 38. Abstract.
- Hemopoietic Effects of Holothurin, a Steroid Saponin from the Sea-cucumber, *Actinopyga agassizi*, in *Rana pipiens*. With Sophie Jakowska, Patricia M. Murray and Agatha Veltri. *Anat. Rec.*, Vol. 132, No. 3, p. 459. Abstract.

DR. GORDON

- Biology and the Fish Fancier. *Natural History*, Vol. 67, No. 1, pp. 20-25.
- Search for the Pygmy Swordtail. *Aquarist and Pondkeeper*, Vol. 22, No. 10, pp. 209-214, 216.
- The First Fish Fancier to Develop the Albino Platy Strain Deserves a Medal. *Tropical Fish Hobbyist*, Vol. 6, No. 3, pp. 28-33.
- Fighting Fish, Temperature and Drugs. *Aquarist and Pondkeeper*, Vol. 22, No. 12, pp. 271-272.
- Facts from a Fish Bowl. *Pageant*, Vol. 13, No. 11, pp. 80-85.
- Operation Barracuda. *Aquarium Journ.*, Vol. 29, No. 4, pp. 127-133, 147; No. 5, pp. 176-178. *Aquarist and Pondkeeper*, Vol. 23, No. 8, pp. 160-162.
- Como los Peces Consiguen sus Nombres. *Acuario* [Havana], Vol. 2, No. 6, pp. 156-158, 170-174.
- The Drifting Leaf that's Really a Fish. *Aquarium Journ.*, Vol. 29, No. 7, pp. 243-249.
- A Genetic Concept for the Origin of Melanomas. *Ann. N. Y. Acad. Sci.*, Vol. 71, No. 6, pp. 1213-1222.
- Barracuda—Tiger-of-the-sea. Pp. 328-337 of "The Illustrated Library of the Natural Sciences" edited by Edward M. Weyer, Jr. Simon and Schuster, New York.
- Fishes in Armor. Pp. 2280-2281 of "The Illustrated Library of the Natural Sciences" edited by Edward M. Weyer, Jr. Simon and Schuster, New York.
- Animals of the Sargasso Merry-go-round. Pp. 2464-2473 of "The Illustrated Library of the Natural Sciences" edited by Edward M. Weyer, Jr. Simon and Schuster, New York.
- The Trunkfish Swims in Armor. Pp. 2868-2875 of "The Illustrated Library of the Natural Sciences" edited by Edward M. Weyer, Jr. Simon and Schuster, New York.
- A Blueprint for Breeding Cuppies with Better Coloring. *Tropical Fish Hobbyist*, Vol. 7, No. 3, pp. 15-25.
- Genetics of Fin Transplantation in Xiphophorin Fishes. With Klaus D. Kallman. *Ann. N. Y. Acad. Sci.*, Vol. 73, Art. 3, pp. 599-610.

Genetics and Speciation in Fishes. *Year Book, 1957, American Philosophical Soc.*, pp. 250-251. Abstract, report.

Genetic and Developmental Differences between Two Morphologically Similar Pigment Cells with Reference to Melanoma. *Anat. Rec.*, Vol. 132, No. 3, p. 446. Abstract.

The Effect of Analogs on Pigment-cell Metabolism. With Sylvia S. Greenberg and M. J. Kopac. *Proc. Amer. Assoc. Cancer Res.*, Vol. 2, No. 4, p. 303. Abstract.

MR. ROSEN

Evolutionary Significance of the Axial and Appendicular Skeletons of Viviparous Cyprinodonts (Pisces). *Anat. Rec.*, Vol. 132, No. 3, pp. 496-497. Abstract.

PERSONNEL. Director Coates was elected Fellow of the Academy of Zoology of Agra, India. He was reappointed Research Associate in the Department of Gynecology, Jewish Memorial Hospital, New York. Director Coates again served as Ichthyology Advisory Editor for the *Encyclopedia Americana*, a position that he has held since 1953. In April, Associate Curator Atz returned from a six-months' leave of absence during which time he conducted doctoral research at the Aquarium's Genetics Laboratory at the American Museum of Natural History.

Carleton Ray, Assistant to the Director, received the degree of Doctor of Philosophy from Columbia University in June. His thesis was entitled "The Application of Bergmann's and Allen's Rules to Cold-blooded Animals." In January, Dr. Ray led a ten-man, Society-sponsored expedition to the Bahamas to make a survey of part of the Exuma Cays. This formed the basis of a detailed recommendation to the Bahamian Government that 176 square miles of Crown Land and adjoining waters be permanently set aside as a land-and-sea National Park, one of the first of its kind anywhere. The response to this proposal has been enthusiastic and by the end of the year a Bahamas National Trust Act lay before the legislature, from which favorable action was expected. Dr. Ray was elected an Active Resident Member of the Explorers Club.

Dr. Nigrelli was appointed full Adjunct Professor of Biology in the Graduate School of Arts and Science of New York University and Ichthyopathologist of the Research Staff of Beth Israel Hospital, New York. He was elected Chairman of the Nominating Committee of the Bermuda Biological Station for Research. As Organizing Chairman of a symposium on Biological and Pharmacological Compounds Derived from Marine Organisms, Dr. Nigrelli has arranged for the participation of many scientists from this country and abroad. This pioneering conference, which is being sponsored by the Zoological Society, the New York Academy of Sciences and the American Institute of Biological Sciences, will be held in New York in 1960. Dr.

Nigrelli also served as a member of the organizing committee for an international symposium on marine microbiology that is to take place in 1961, and as a guest member on the Panel on Ocean Resources of the National Academy of Sciences in June.

Dr. Gordon attended the Fifteenth International Congress of Zoology and the Seventh International Cancer Congress, both held in London. At the Tenth International Congress of Genetics in Montreal he demonstrated unusual hybrid fishes developed in the Genetics Laboratory. He gave two lectures and laboratory demonstrations on Physiological Genetics for the In-Service Institute for High School Teachers of Biology, Chemistry and Physics, sponsored by the Esso Education Foundation. Dr. Nigrelli lectured to the same group on Microbiology.

Members of the staff gave papers and lectures and participated in discussions at the following institutions and places:

Fifteenth International Congress of Zoology, London.

Seventh International Cancer Congress, London.

Tenth International Congress of Genetics, Montreal.

American Society of Zoologists, Washington, D. C., meeting.

American Association for Cancer Research, Philadelphia meeting.

Society of Protozoologists, Bloomington meeting.

American Institute of Park Executives, New Orleans meeting.

Northeast Wildlife Conference, Montreal.

Columbia University Symposium on Comparative Endocrinology, Cold Spring Harbor.

Third Tissue Homotransplantation Conference, New York Academy of Sciences.

Vertebrate Zoology Symposium, A.A.A.S., Washington, D. C., meeting.

Symposium on Fish Diseases, American Fisheries Society, Philadelphia meeting.

Aquarium Symposium, American Society of Ichthyologists and Herpetologists, Bloomington meeting.

Seminars, Departments of Embryology and Endocrinology, Columbia University; Department of Biology, New York University; University of Delaware; Rutgers University; Department of Animal Behavior, American Museum of Natural History.

La Société de Médecine Veterinaire de la Province de Quebec.

Numerous clubs, groups, schools and radio and television programs.

CENSUS OF THE AQUARIUM

December 31, 1958

PHYLUM CHORDATA

CLASS PISCES—FISHES

SUBCLASS TELEOSTOMI—RAY-FINNED FISHES

<i>Orders</i>		<i>Species</i>	<i>Specimens</i>
CLADISTA	Lobefins	1	1
CHONDROSTEI	Sturgeons	1	1
ISOSPONDYLI	Herring, Salmon, Pikes	1	3
OSTARIOPHYSI	Minnows, Characins, Catfishes	16	53
APODES	Eels and allies	7	12
CYPRINODONTES	Top-minnows	4	19
HEMIBRANCHII	Seahorses and allies	2	6
ANACANTHINI	Cod, Hake and allies	1	6
BERYCOIDEI	Squirrel Fishes and allies	1	28
PERCESOCES	Silversides, Mulletts and allies	1	6
PERCOIDEI	Spiny-rayed Fishes	34	225
LABYRINTHICI	Snakeheads, Gouramis and allies	1	1
CHAETODONTOIDEI	Butterfly Fishes and allies	14	33
ACANTHUROIDEI	Surgeon Fishes and allies	2	3
CHROMIDES	Demoiselles and Cichlids	16	96
PHARYNGOGNATHI	Wrasses and Parrot Fishes	9	47
GOBIOIDEI	Gobies and allies	1	3
CATAPHRACTI	Scorpion Fishes and allies	2	15
BLENNOIDEI	Blennies and allies	1	1
DISCOCEPHALI	Remoras	1	1
PLECTOGNATHI	Trigger Fishes, Puffers and allies	15	40
HAPLODOCI	Toadfishes	1	6
SUBCLASS DIPNEUSTI—LUNG FISHES		3	7
CLASS REPTILIA—REPTILES			
TESTUDINES	Turtles and Tortoises	11	29
CROCODILIA	Crocodiles and allies	2	7
CLASS AVES—BIRDS			
SPHENISCIFORMES	Penguins	1	8
CLASS MAMMALIA—MAMMALS			
PINNIPEDIA	Seals, Sealions and Walruses	6	12
PHYLUM PORIFERA—SPONGES		1	1
PHYLUM COELENTERATA			
CLASS ANTHOZOA—SEA ANEMONES		1	8
PHYLUM ARTHROPODA			
CLASS CRUSTACEA—LOBSTERS AND ALLIES		7	24
CLASS ARACHNIDA—HORSESHOE CRABS AND ALLIES		1	7
PHYLUM MOLLUSCA			
CLASS GASTROPODA—SNAILS		2	2
PHYLUM ECHINODERMATA			
CLASS ECHINOIDEA—SEA URCHINS		1	6
TOTALS		168	717

Summary: Species, 168; Specimens, 717.

DEPARTMENT OF TROPICAL RESEARCH

WILLIAM BEEBE, *Director Emeritus*

JOCELYN CRANE, *Assistant Director*

HENRY FLEMING, *Entomologist*

DAVID W. SNOW, *Resident Naturalist*

A SINGLE MAJOR expedition, the Fifty-ninth of the Department, was undertaken and completed in 1958. The expedition left New York for Trinidad on the *Alcoa Planter*, arrived at Simla on January 5, and returned via Pan American Airways on June 16. The last five weeks of the year were also spent at Simla, as the beginning of another expedition.

CONSTRUCTION AND MAINTENANCE. The chief construction was the replacement of the floor and ceiling of the Guest House and Photographic Laboratory. These had been built of pine and became riddled with termites. The new wood is mora and local cedar, which are both untouched by tropical pests. Final improvements were made on St. Pats cottage, and a driveway was built from the roadway to the door. The generator and the two cars were completely overhauled. During December a new, medium-sized insect house was erected. All of this work was planned and directed by Mr. Fleming.

TRIPS. A trip to the Nariva Swamp revealed a considerable number of small Red-Bellied Macaws and of large Blue-and-Yellows. Even during the comparatively short time of our occupancy of Simla these birds have become practically extinct in other parts of Trinidad.

A visit to the Caroni Swamp showed disregard for present game laws. Fifty to seventy hunters were on the marsh every day during the season, and while the legal limit was five Ibis per gun, ten were usually killed. In spite of this, however, their numbers showed no appreciable sign of diminution. An estimate sets their numbers at five thousand.

Dr. Snow made two trips outside Trinidad, to Panama and Tobago, respectively, to study the habits of several species of manakins by means of observation, motion picture photography and tape-recordings.

In December Mr. Fleming went to Surinam to procure living material for studies at Simla during 1959 of polymorphic butterflies.

ACTIVITIES OF VISITING WORKERS AND OF THE STAFF. In mid-January Dr. Anne J. Alexander arrived as a guest investigator, from Rhodes University in South Africa. She spent two months in the study of scor-

pions and Peripatus, animals on which she is an authority. Her special interest was a comparison of the behavior of the Trinidad species with their African relations. The studies were extremely successful, many new observations being made and hypotheses verified. Peripatus are strange, primitive animals which have been known to live for six years in captivity while their little-changed ancestry stretches back at least to the Cambrian. Dr. Alexander found two species at Simla, with 14 to 41 pairs of legs. She watched one feeding at night in the forest on a cricket which the Peripatus had enveloped with slime shot out from two glands, and observed the young being born. The Giant Peripatus produces either a single larva, or twins, each being a third as long as the parent.

The elaborate nuptial dances of Trinidad scorpions were also recorded as well as care of the young by the mother.

Dr. A. D. Blest, of the Department of Zoology, University of London, spent the last five weeks of the year at Simla, continuing his well-known research on behavior in the family of moths known as Saturniidae. They are familiar to us in the United States through the Giant Silk-worm Moths, such as Io, Polyphemus, Luna and Cecropia. The tropical forms, particularly, show a wide range of protective devices by which they escape from, or avoid the attention of, their predators. Some species closely resemble dead leaves; others possess eye-like markings on the hind-wings which startle small predators; still others, of proved distastefulness, have brightly-banded bodies and a strong odor. Correlated with these structural and physiological features are characteristic behavior patterns. These range from the unresponsive inertness of cryptically-colored forms to the grotesque displays of distasteful species. Altogether some twenty-two species were examined by Dr. Blest at Simla, the study providing information about the way in which evolution modifies and alters simple behavior patterns to provide more complex ones.

Early in the year, Mr. M. Woodbridge Williams, natural history photographer on the editorial staff of the *National Geographic Magazine*, flew to Simla for two months' work on various forms of life to illustrate Department articles now in preparation.

Mrs. Julie C. Emsley, who is currently a resident of Trinidad, joined the staff in April as scientific artist for the Field Station. Her help has been invaluable in illustrating characteristic postures and movements of living crabs, moths and butterflies and in producing morphological drawings, made through the microscope, for various Department publications.

Mr. Russ Kinne and Mrs. Jane S. Kinne arrived December 1, as staff photographer and laboratory assistant, respectively, for the 1958-

1959 season at the Field Station. Their varied activities, scheduled principally for the year 1959, will be recorded in the next ANNUAL REPORT.

During 1958 Dr. Snow continued the three principal lines of investigation started the previous year. These were a study of the displays and general biology of the manakins, the biology of the oilbird and a survey of the breeding seasons of the land birds.

Of the two manakins, the Black-and-White Manakin received the most attention. Breeding was followed through, from April to September, displays were filmed and the accompanying sounds tape-recorded, and a large number of birds were trapped, examined and released. From June 6, when trapping began, to the end of the year, 90 different individuals were caught and banded, and of these a large number were seen and/or retrapped subsequently. At the two display grounds at St. Pats, a total of 14 marked males held courts. These observations on color-marked birds are beginning to elucidate the organization and function of communal displays. Field trips associated with the study were made to Barro Colorado in the Canal Zone, and to Tobago.

Observations on the oil birds' behavior were made in daylight during the early part of the year, from a hide erected on a platform some twenty feet from the nests, and later their breeding was followed in detail. Food samples were collected throughout the year, the grand total of food-items analysed by the end of December reaching nearly 56,000.

The general survey of breeding seasons continued, with the accumulation of a large number of additional records, including many through the cooperation of the Trinidad Regional Virus Laboratory. Particular attention was paid to forest birds and to the Short-tailed Swift.

Mr. Fleming continued his work on the systematics of the syntomid moths of Trinidad, completing for *Zoologica* the second part of the study. This section deals with more than fifty species, of which a number are new to the island. A similar report on the family of saturniids is underway.

In the field he resumed the assembly of data on the ecology of butterflies and their food plants. At the end of the year his successful field trip to Surinam provided the material essential for a joint staff study, during the 1959 season, of polymorphism in butterflies.

In the course of recent field work on tropical fiddler crabs, Miss Crane felt increasingly the need for supplementary observations on captive crabs. Accordingly, a group of Trinidad species was estab-

lished in an outdoor crabbery, complete with mud-bank and water, in the Simla compound. Appropriate tides were duplicated by means of a hose and drain pipe, so that the crabs could obey their internal clocks without interruption. For more than four months detailed records were kept of the daily activities of marked individuals. Specific differences in internal rhythms were worked out and extensive repertoires of social behavior patterns recorded. By the end of the season these observations had provided, as hoped, an invaluable supplement to the comparative studies of wild populations in both hemispheres. During the summer and fall at the Zoological Park, morphological work proceeded on the collection of preserved fiddlers, now the largest in the world, in preparation for a monograph on the group.

Studies on the comparative social behavior of heliconiid butterflies were continued in the insect houses at Simla. Because of improved experimental techniques, the more primitive sensory responses of blue-and-yellow species could be tested, for comparison with better known advanced forms.

Dr. Beebe added to the scope of his studies the analysis of birds' nests, deducing from the character of materials the methods of gathering, discrimination shown in selection and distance covered. Combined with these were observations on variations in the methods of detaching living vegetation.

His major work, on comparative adaptations of birds from Southeast Asia and the Neotropics, was continued, along with the writing of a non-technical book on Simla.

GRANTS AND GIFTS. A three-year grant from the National Science Foundation was received for the study of heliconiid butterflies, under Miss Crane's direction. These funds will provide for additional personnel as well as for special equipment. Previous grants from the same organization furnished the fourth year of support for Miss Crane's work on ocypodid crabs and, for the second year, support of the tropical bird studies by Dr. Beebe and Dr. Snow. A part of the grant received by the Department in 1956 from the National Geographic Society made possible Mr. Fleming's field trip to Surinam. Finally, a grant from the Hartley Corporation permitted the purchase of a binocular microscope and all accessories. As in previous years, helpful cooperation continued to be received from a number of organizations. In scientific matters, through the loans of specimens and exchange of information, our usual cordial relations were particularly active with the United States National Museum, the Museum d'Histoire Naturelle in Paris, the Trinidad Regional Virus Laboratory and the Imperial College of Tropical Agriculture.

The Alcoa Steamship Company contributed its usual generous aid

in the Department's transportation problems, and additional help was received from the Booth Steamship Line. The Trinidad Textile Company, through its general manager, Mr. Silas Auerbach, gave us the freedom of its excellently equipped machine shop.

Finally, generous contributions were received from Mr. Curt H. Reisinger, Mrs. Mabel S. Ingalls, Mrs. W. F. Daniell and Dr. A. Parks McCombs. These gifts have contributed toward the salaries of seasonal staff members at Simla, made possible the erection of the additional insect houses needed for an expanded program, and provided for the purchase of major items of household equipment.

VISITORS. The following names have been chosen from among our many visitors as outstanding people who are interested in our work. Dr. and Mrs. Wilbur Downs, Dr. and Mrs. Grinsted, 35 members of the Canadian Women's Club and 45 members of the American Women's Club, the Natural History Society of the Imperial College of Tropical Agriculture, Captain and Mrs. Milton Miles, Mr. Frank Bell, Vice-president of Alcoa, and Mrs. Bell, Mrs. Dos Santos, Mr. and Mrs. Sy Auerbach, Dr. and Mrs. Aitken, Dr. Angus Simmonds, Col. and Mrs. Alston, Mr. and Mrs. Darnton, Captain Charles Firth, Mrs. J. B. Webster, Mrs. C. Rex Stollmeyer, Mr. and Mrs. John Probst, head of Pan American Airways, and Dr. and Mrs. William Jones.

CONTRIBUTIONS, 1958

982. Bird Notes from Arima Valley, with Three New Records for Trinidad. David W. Snow. *Journal of the Trinidad Field Naturalists' Club*, 1957, pp. 20-22.
983. Visit to Simla. Blair Coursen. *Turtlox News*, January, 1958.
984. The High World of the Rain Forest. William Beebe. *National Geographic Magazine*, June, 1958, pp. 838-855.
985. The Guacharos of Caripe. William Beebe. *Animal Kingdom*, Vol. LXI, No. 4, August, pp. 114-117.
986. Trinidad Oilbirds are Yielding New Facts. David W. Snow. *Animal Kingdom*, Vol. LXI, No. 4, August, pp. 117-121.
987. *Peripatus*: Fierce Little Giant. Anne J. Alexander. *Animal Kingdom*, Vol. LXI, No. 4, August, pp. 122-125.
988. Little Crab with a Big Empire. Jocelyn Crane. *Animal Kingdom*. Vol. LXI, February, No. 1, pp. 12-15.
989. Aspects of Social Behavior in Fiddler Crabs, with Special Reference to *Uca maracoani* (Latreille). Jocelyn Crane. *Zoologica*, Vol. 43, No. 10, pp. 113-130.
990. A Catalog of the Type Specimens of Fishes formerly in the Collections of the Department of Tropical Research, New York Zoological Society. Giles W. Mead. *Zoologica*, Vol. 43, No. 11, pp. 131-134.
991. Report on the Study of Ocypodid Crabs in Zanzibar. Jocelyn Crane. East African Marine Fisheries Research Organization of the East Africa High Commission. Annual Report for 1957-1958. Appendix.
992. Annual Report of the Department of Tropical Research for 1957. William Beebe. pp. 58-61.

MEMBERSHIP

GORDON CUYLER, *Membership Chairman*

WHEN OUR NEW Supporting Membership class (dues \$100 annually) was announced at the Annual Meeting at the Waldorf-Astoria in January, 1958, no one was willing to predict how many—if any—Members would transfer to this new category. Supporting Membership offers no privileges that are not available to Annual Members—it simply gives Members the opportunity to make an extra contribution. Hence, it is a great pleasure to report that 50 of our Contributing Members became Supporting Members during the year.

For the third year in succession Membership gained more Members than were lost through deaths, removal from the New York area or resignations. Four hundred and thirty-six new Members were acquired and 295 Memberships were lost, giving us a net gain of 141 for the year and a total Membership of 3,601. Membership income of \$58,700 was an all-time high, topping the record-breaking years of 1956 and 1957. Various means were used to gain the new Members, including letters and pamphlets to persons suggested by present Members, promotional pamphlets to selected prospects and distribution of materials to visitors coming to the Zoo by automobile.

Two Membership promotional pamphlets were published: "What the Zoo Can Do For You," a practical exposition of the advantages of Membership illustrated by silhouettes by Ugo Mochi, and "Aims," a description of the Society's far-flung interests in preservation of wildlife, conservation, education and research. Membership owes thanks to the Publications Department for the attractive design of both pamphlets. In addition, newsletters from Simla, Trinidad, by Dr. William Beebe, about the intense activities of the Department of Tropical Research, and from Australia by David Fleay, describing his quest for the Platypuses, were mailed to Members, friends and prospective Members. Mr. Fleay's letter was processed in Australia with a Platypus nine pence stamp and mailed from West Burleigh, Queensland.

Other Membership activities for the year included a most successful Members' meeting in January at the Waldorf-Astoria, three curator-conducted Members' Tours of the Zoo and Aquarium, a lunch for donors and special friends of the Society in May, a Members' Platypus preview, luncheons for Princeton's class of 1909, the Century Club, the University Club and the Coffee House, and a sparkling Garden Party for Members on a clear September day in the Zoo.

THE CONSERVATION FOUNDATION

The 1958 Annual Report of The Conservation Foundation, the affiliate of the New York Zoological Society in conservation work, may be had upon request from the Foundation's offices at 30 East 40th Street, New York 16, N. Y.

JACKSON HOLE BIOLOGICAL RESEARCH STATION

SPONSORED BY THE NEW YORK ZOOLOGICAL SOCIETY
AND THE UNIVERSITY OF WYOMING

L. FLOYD CLARKE, *Director*

RESEARCH PROJECTS during the summer of 1958 included continuation of those from previous summers and initiation of new ones. The following list of research workers, their projects and sources of financial support will give an idea of the Station research activities:

Margaret Altmann—The Social Role of the Juvenile Elk and Moose. This is part of a long range investigation on comparative behavior patterns in free-ranging, wild ungulates. More emphasis was given during the past summer to the role of the juvenile and his position in the social structure. Supported by the New York Zoological Society.

Alan A. Beetle—Sagebrush-Grass Competition. This was the third and final year of the study of sagebrush types occurring in the 11 western states. Mapping of about twenty different types is completed, and publication on this work should be forthcoming within a year. Assisted by Robert Sandberg. Supported by the Wyoming Agricultural Experiment Station through Inter-regional Research Program.

Alan A. Beetle and Collaborators—Factors Affecting the Ecology of the Teton National Forest. This completes the third year of five on this study to determine range condition classes on a grazing allotment basis of lands grazed by domestic livestock in the Jackson Hole area of Wyoming. Aims are to correlate the vegetation condition classes with forage yield studies, with water infiltration studies and other types of management practice. These studies are being correlated with studies of aspen, wheatgrass and Idaho fescue, finished in other years. Supported by the Wyoming Natural Resources Board.

L. Floyd Clarke and George T. Baxter—Effects of Sewage Effluent on the Ecology of Swan Lake. The work on Swan Lake was continued as in the previous four summers. The information obtained gave some clear indications of the changes taking place in the lake as a result of the effluent from the Colter Bay area. Sufficient data are available now to justify a compilation of work up to this point for publication. Assisted by Hugh B. House.

Albert K. Dobrenz—Cleistogamy in *Danthonia*. This research was concerned with the study of the distribution and reproduction of the various species of grasses of the genus *Danthonia*. Experiments were also performed on shade tolerance and seed production in various habitats.

Eugene E. Eggleston—An Investigation of Livestock Distribution with Application of Nitrogen Fertilization. This study included determinations on the effects of nitrogen fertilization on plant production and on livestock utilization. Comparisons were made with the degree of usage by livestock on non-treated areas. Nitrogen was applied from an airplane at 67 pounds per acre over three treated areas. Analysis of data is incomplete.

Garth Kennington—High Altitude Animal Physiology. Initial preparations were made for high altitude physiology studies to be continued during the summer of 1959.

Charles C. Laing—Effect of Visitors on Alpine Ecosystems in the High Tetons. This was the first year of a three to four summers' projected program, sponsored by the National Park Service and being worked out with personnel of the Grand Teton National Park. The study last summer included general reconnaissance of the areas to be studied, preparation of base maps of the Lake Solitude Basin, identification of plant species and an analysis of the distribution and abundance of species, study of environmental factors and preliminary study on the effects of visitor use of the area. Assisted by Lawrence D. Crowley. Supported by the National Park Service and the University of Wyoming.

Donald C. Lowrie—A Survey of Invertebrates of Jackson Hole. This project was designed to provide a working collection of insects and other invertebrates for the Station. Supported by the New York Zoological Society.

Norman C. Negus—Life History Study of *Microtus richardsoni macropus* and Physiology of Molting in Mammals. Study on colony sites, habitat preferences and molting in *Microtus* was made to furnish the additional information necessary for publication. This study has extended over several years and the results will be published in the near future. Weasels were collected to be used in laboratory studies of effects of gonadotrophins and reduced photoperiod.

Glenn A. Noble—Intestinal Protozoa of Mammals. Considerable information was obtained on life histories, methods of infection and viability of amoebae. As yet there is no evidence of truly parasitic amoebae in the large mammals of Jackson Hole. Supported by the New York Zoological Society.

Paul G. Roope—Vascularity of the Brain of *Amblystoma*. This study included capillary patterns, rate of flow and volume of blood and correlation of weights, lengths and other dimensions of *Amblystoma tigrinum melanosticum*. Supported by U.S. Public Health Service grant.

Gerald and Coral Scherba—Comparison of Montane Ant Communities. Only a week was spent at the Station this summer, during which time the ant colonies on Moose Island were mapped and marked for further study.

Dixie R. Smith—An Evaluation of Certain Exlosures. The primary objectives were to locate relicts suitable for use in the study of range condition; to identify, measure and classify the vegetation within the relicts; and to determine the nature of the vegetative response to the existing grazing pressures. Grazing by game, primarily Elk, has apparently resulted in a major change in composition of herbaceous vegetation when compared with closely associated relicts. Associations within basic units are apparently unstable and often reflect grazing pressures rather than natural habitat adaptations. The results of this study were used as

partial requirement for the Ph.D. degree at the University of Wyoming. Supported by the Wyoming Natural Resources Board.

Charles S. Thornton—Regeneration in Amphibia. Two aspects of limb regeneration in larvae of *Amblystoma* were studied: relationship between wound epithelium and motor nerve fibers in limbs regenerating with only a motor nerve supply, and whether the influence of peripheral nerve fibers on the formation of the apical cap in the wound epithelium is due to physical or chemical factors. The tissues are now being analyzed histologically to determine these points. Supported by a grant from the National Science Foundation.

PHYSICAL FACILITIES. No buildings were added to the Station the past year, although numerous minor repairs and improvements were made. The refurnishing and remodeling of the old powerhouse into the bathhouse was completed early in the summer before research workers arrived and the bathhouse was in use during the summer. Improvements of the grounds were continued, the most important being the graveling of roads within the Station grounds. A large gasoline tank and pump were installed for the convenience and economy of Station vehicles as well as personal cars of the research workers.

At present we have no plans for increasing the size of the Station. However, we expect to make the following improvements as soon as possible:

1. Construction of a room to serve as a seminar room, library and reading room. The library is now located in three different places. The weekly seminars have been held in the living room of the home of the Director, and the space available is not adequate. This room will be constructed either as a separate building or as an addition to the laboratory.

2. Construction of a log building to serve as bachelor quarters for research workers to replace the existing bunkhouse.

SEMINARS. Seminars presented by research workers were held each Thursday evening at 7:30 P.M. in the home of the Director. They were well attended by Research Station personnel, Park Service employees, Forest Service employees and other biologists who happened to be in the area at the time. The number of biologists attending varied from 25-40.

LIBRARY. Although we are constantly trying to increase the availability of books and periodicals to Station personnel, the limited amount of Library space makes it very difficult to do this successfully. Reprints of papers published last year on research done at the Station were added to our collection.

STUDENT CONSERVATION PROGRAM. Cooperation with the Student Conservation Program was extended during the summer. Three

students from this program were assigned to the Station for the entire period of eight weeks to work on research projects under the supervision of Station investigators. Two students were assigned to assist Dr. Lowrie in the study of invertebrates of the area, and one student assisted Dr. Laing on the alpine ecology study. In addition, each student was provided the opportunity to become acquainted with all the research projects under way at the Station. It is planned to continue this program in 1959.

PARK SERVICE COOPERATION. As a result of conferences with Park Service personnel since our meetings of a year ago, considerable progress has been made in the development of a satisfactory lease and agreement which will insure the continued successful operation of the Research Station. The New York Zoological Society and the University of Wyoming will continue to cooperate in the development of the Station under the terms of the new agreement.

TREASURER'S REPORTS

For the Year Ended December 31, 1958

DAVID H. McALPIN, *Treasurer*

30 East 40th Street

New York 16, N. Y.

NEW YORK ZOOLOGICAL SOCIETY

BALANCE SHEET • December 31, 1958

ASSETS

Cash in banks and on hand.....		\$ 118,292.78
Investments (quoted market value \$8,633,756)—(notes 3 and 4)		6,830,288.10
Receivable from the City of New York:		
New York Zoological Society:		
Appropriation for park maintenance—calendar		
year 1958	\$798,532.65	
Less amount received.....	597,417.83	
	<u>201,114.82</u>	
Deposit (note 4).....	15,331.63	
	<u>216,446.45</u>	
New York Aquarium:		
Receivable	8,358.39	224,804.84
Other receivables		12,562.88
Inventories:		
Park facilities	22,146.27	
Aquarium	16,897.77	39,044.04
Facilities' assets, less depreciation:		
Zoological Park (note 1):		
Improvements to land and buildings.....	161,318.76	
Equipment and miscellaneous items.....	49,694.48	
	<u>211,013.24</u>	
Aquarium equipment and miscellaneous items	<u>26,028.00</u>	237,041.24
Prepaid expenses and deferred charges.....		24,442.98
National collection of heads and horns, art gallery, library and		
sundry items		1.00
Collection of living animals.		1.00
Jackson Hole research station buildings.....		1.00
Simla Tropical research station.....		1.00
		<u>\$7,486,480.86</u>

NEW YORK ZOOLOGICAL SOCIETY

BALANCE SHEET • December 31, 1958

LIABILITIES

Accounts payable and accrued expenses.....	\$ 118,556.43
Payable to the City of New York—due on first stage completion of Aquarium (note 4).....	16,671.63
Fund reserves:	
General Funds	\$5,053,639.40
Endowment Funds	1,641,023.22
Special Purpose Funds.....	366,276.82
Reserve for Educational and Other Purposes.....	89.52
Park Facilities Operating Fund.....	284,963.60
Aquarium Development Fund.....	5,260.24
	<hr/>
	7,351,252.80
	<hr/>
	\$7,486,480.86
	<hr/>

NOTES TO FINANCIAL STATEMENTS:

- (1) Park facilities' assets are subject to an agreement with the City of New York, and the net income from park facilities' operations may be used only for the purchase of animals and the improvement of Zoological Park.
- (2) The balance sheet does not include the assets and liabilities of The Pension Fund.
- (3) Except for income from investments, which is accounted for in the year received, the balance sheet is prepared on an accrual basis.
- (4) The New York Zoological Society and the City of New York have agreed to construct an aquarium, as funds become available, at an estimated total cost (to be shared equally) of \$7,100,000.00, of which the initial stage (\$1,565,134.00) has been completed. At December 31, 1958 the Society has on deposit with the City of New York, as a guarantee for the balance (\$16,671.63) of its share of the initial stage construction costs, U. S. Treasury notes of the par value of \$10,000.00 and cash in the amount of \$6,781.63.

The Society and the City of New York are also parties to an agreement for construction of additional parking facilities at the New York Zoological Park, at an estimated total cost (to be shared equally) of \$302,700.00, of which preparatory costs of \$5,600.00 were incurred in 1958. At December 31, 1958 the Society has on deposit with the City of New York, as a guarantee for the balance (\$148,550.00) of its share of such construction costs, U. S. Treasury bonds of the par value of \$140,000.00 and cash in the amount of \$8,550.00.

FUND RESERVES

December 31, 1958

General:

General Working Fund.....	\$ 53,067.36	
Anna M. Harkness Fund.....	1,226,853.19	
Sage Fund	761,537.47	
Mary Clark Thompson Fund.....	3,012,181.38	
		<u>5,053,639.40</u>

Endowment:

George F. Baker Fund.....	\$ 142,740.52	
Edward P. Casey Fund.....	106,663.94	
Mary Thurston Cockroft Fund.....	40,380.95	
Robert Jaffray Fund.....	18,184.23	
William Pyle Philips Fund.....	13,411.27	
Rockefeller Fund	1,319,642.31	1,641,023.22
	<u>1,319,642.31</u>	

Special Purpose:

Cadwalader Animal Fund.....	26,028.94	
Conservation Account	18,330.78	
William E. Damon Fund.....	44,143.45	
Grant Fund for the Protection of Wildlife...	32,241.82	
Jacob H. Schiff Fund.....	139,410.80	
Stokes Bird Fund.....	6,571.80	
Miscellaneous	99,549.23	366,276.82
	<u>99,549.23</u>	

Reserve for Educational and Other Purposes.....	89.52	
Park Facilities Operating Fund.....	284,963.60	
Aquarium Development Fund.....	5,260.24	
Aquarium Operating Reserve Fund.....	—	
		<u>\$7,351,252.80</u>

See accompanying notes to financial statements.

PERMANENT WILD LIFE PROTECTION FUND

Investments, at book value (quoted market value \$192,582.50)	\$ 173,581.88	
Less amount due to New York Zoological Society.....	63.48	
Amount of Fund at December 31, 1957.....	\$164,999.27	
Add net profit on investments sold and redeemed in 1958	8,819.13	
	<u>8,819.13</u>	
Principal Fund at December 31, 1958.....	\$ 173,518.40	

SUMMARY OF CHANGES IN FUND RESERVES, OTHER THAN PARK FACILITIES AND AQUARIUM FUNDS

Year ended December 31, 1958

GENERAL FUNDS

Balance at December 31, 1957.....	\$4,812,810.45
Receipts	296,589.34
	<u>\$5,109,399.79</u>
Expenditures	55,760.39
Balance at December 31, 1958.....	<u><u>\$5,053,639.40</u></u>

ENDOWMENT FUNDS

Balance at December 31, 1957.....	\$1,563,696.85
Receipts	77,326.37
	<u>1,641,023.22</u>
Expenditures	—
Balance at December 31, 1958.....	<u><u>\$1,641,023.22</u></u>

SPECIAL PURPOSE FUNDS

Balance at December 31, 1957.....	\$	349,848.78
Receipts	\$205,562.42	
Appropriations from other funds.....	<u>394,000.00</u>	<u>599,562.42</u>
		949,411.20
Expenditures		583,134.38
Balance at December 31, 1958.....	\$	<u><u>366,276.82</u></u>

RESERVE FOR EDUCATIONAL AND OTHER PURPOSES

Balance at December 31, 1957.....	\$	1,078.65
Receipts		525.00
		<u>1,603.65</u>
Expenditures		1,514.13
Balance at December 31, 1958.....	\$	<u><u>89.52</u></u>

See accompanying notes to financial statements.

AQUARIUM DEVELOPMENT FUND

Year ended December 31, 1958

Balance at December 31, 1957..... \$ 11,891.84

Add:

Gifts	\$ 20,906.75	
Income from Investments	796.52	
Appropriation from the general funds of the Society	13,002.00	34,705.27
		46,597.11

Deduct:

Costs borne wholly by the Aquarium Development Fund:

Construction	13,268.83	
Drawings and specifications	4,000.00	
Architect's fee	10,305.73	
	27,574.56	
Net loss on sale of securities	166.48	
Survey of aquarium operations and facilities ...	13,002.00	
Miscellaneous	593.83	
		41,336.87

Balance at December 31, 1958..... \$ 5,260.24

See accompanying notes to financial statements.

NEW YORK AQUARIUM

Statement of Income and Expense and Operating Reserve Fund Year ended December 31, 1958

Balance of Aquarium Operating Reserve Fund
at December 31, 1957..... \$ 69,160.37

Add receipts from:

Admissions	\$144,438.10
Restaurants	34,871.48
Parking field	25,059.00
Souvenirs	16,307.14
Guides and publications.....	2,650.77
Head phones	2,064.25
Miscellaneous income	429.67
	<u>225,820.41</u>

Less:

Cost of merchandise sold.....	\$ 24,243.74
Personal service:	
Executive management.....	\$59,665.12
Aquarium exhibits	26,925.33
Maintenance of build- ings and grounds....	79,559.61
Facilities	<u>38,067.15</u> 204,217.21
Supplies	27,096.24
Materials and equipment.....	4,547.21
Collections	13,011.01
Administrative costs	34,459.25
Other operating and general expenses	<u>4,122.90</u> 311,697.56

Net loss 85,877.15

Aquarium Operating Reserve Fund deficit at December 31, 1958. 16,716.78

Contractual reimbursement (pro-rata) of
accumulated operating deficit:

City of New York.....	8,358.39
New York Zoological Society.....	<u>8,358.39</u>

16,716.78

Aquarium Operating Reserve Fund at December 31, 1958..... \$ —

See accompanying notes to financial statements.

GENERAL WORKING FUND

Year ended December 31, 1958

Balance at December 31, 1957..... \$ 47,823.94

Add:

Gifts	\$ 42,587.01	
Life memberships	2,400.00	
Conservation film royalties.....	5,743.06	
Pro-rata share of net profit on sales and redemption of investments.....	2,371.79	
Income from general income account.....	7,901.95	61,003.81
		<u>108,827.75</u>

Deduct payments:

Production of publications on the care and exhibition of wild animals in captivity....	3,500.00	
Operating costs of Department of Tropical Research at Simla, Trinidad, B.W.I.:		
For the year ended April 30, 1958....	3,000.00	
For the year ending April 30, 1959....	6,500.00	
Appropriation to The Conservation Foundation, Inc.	10,000.00	
Operating expenses and research at Jackson Hole Research Station.....	2,550.00	
Grant to the National Foundation for Junior Museums	750.00	
Appropriation to New York Aquarium Development Fund for survey.....	13,002.00	
Honorarium to Dr. William Beebe.....	5,000.00	
Miscellaneous	3,100.00	
Society's share (1/2) of the New York Aquarium accumulated operating deficit as of December 31, 1958.....	8,358.39	55,760.39
		<u>55,760.39</u>
Balance at December 31, 1958.....	\$	<u>53,067.36</u>

See accompanying notes to financial statements.

GENERAL INCOME ACCOUNT

Year ended December 31, 1958

Income:

Income from investments.....	\$ 320,523.98
Annual dues	58,869.50
Sales of publications.....	7,175.96
Gift	7,000.00
Miscellaneous income	7,557.79
	<u>\$ 401,127.23</u>

Expenses:

Annual report	3,491.63
Aquarium research	10,400.78
Conservation	20,000.00
Educational activities	17,942.27
Employee welfare	2,629.79
Executive office	22,328.47
Group life insurance.....	6,406.44
Hospitalization	5,242.41
Insurance	7,867.46
Legal fees	10,303.36
Library	1,076.32
Members—meetings and services.....	21,867.52
Membership promotion and fund raising.....	9,817.01

Pensions:

Fund contribution—150% of employee contributions	\$ 28,694.95	
Auxiliary payments	<u>4,540.80</u>	33,235.75

Publication expenses:

Salaries and other expenses.....	32,440.75	
“Animal Kingdom”	15,349.36	
“Zoologica”	<u>6,729.16</u>	54,519.27

Reception expense	3,989.67
Social security taxes.....	1,762.98
Traveling expense	3,713.38
Tropical research	<u>16,970.00</u>
	253,564.51

Park maintenance expenditures for the year 1958	938,193.42
Less amount provided by New York City..	<u>798,532.65</u>

Amount expended by New York

Zoological Society	139,660.77
Income carried to General Working Fund.....	7,901.95
	<u>\$ 401,127.23</u>

See accompanying notes to financial statements.

PARK FACILITIES

Statement of Income and Expense and Operating Fund

Year ended December 31, 1958

Balance of Park Facilities Operating Fund at December 31, 1957. \$556,465.24

Add:

Receipts from sales at restaurants, stands,
etc. and from services..... \$999,267.99

Less:

Cost of merchandise sold.....	\$301,869.41	
Salaries and commissions.....	409,668.09	
Operating and maintenance supplies	88,521.19	
Depreciation	26,095.60	
Comprehensive public liability insurance	15,323.87	
Other operating and general expenses	<u>35,291.47</u>	<u>876,769.63</u>

Net income from sales at restaurants, stands, etc. and from services (note 1).....	<u>122,498.36</u>
	<u>678,963.60</u>

Deduct:

Appropriations for park improvements.....	368,000.00	
Appropriations for the purchase of animals.....	<u>26,000.00</u>	
		<u>394,000.00</u>

Balance of Park Facilities Operating Fund at December 31, 1958. \$284,963.60

See accompanying notes to financial statements.

GIFTS, GRANTS AND LEGACIES RECEIVED

Year ended December 31, 1958

General Working Fund:

George F. Baker, Jr.....	\$ 1,177.26
Booth Ferris Foundation.....	1,000.00
Casolasco Trust and Estate of Lillian Pierre.....	5,000.00
Mr. & Mrs. William Rogers Coe.....	500.00
C. Suydam Cutting.....	1,020.00
Estate of Ethel DuBois.....	5,000.00
Mrs. Constantine Sidamon-Eristoff.....	2,508.75
Dr. Henry Clay Frick, II.....	2,842.25
Childs Frick	4,812.50
Warren Kinney	500.00
Merck Family Fund.....	1,500.00
Mrs. Paul Moore.....	2,000.00
Mr. & Mrs. Howard Phipps, Jr.....	2,470.00
Phipps Florida Foundation.....	1,000.00
Mrs. Magda Merck Sheldon.....	2,000.00
The Thorne Foundation.....	2,000.00
Estate of Prescott Van Wyck.....	5,000.00
Mr. & Mrs. DeWitt Wallace.....	1,000.00
Anonymous	1,256.25
	<hr/>
	42,587.01

Conservation Account:

Saul Blickman	1,780.00
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Madison and De Forest Grant Scientific Research Fund:

De Forest Grant.....	4,525.00
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Anna Fuller Fund.....	1,000.00
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Blickman Film Fund:

Saul Blickman	5,550.00
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Animal Nursery Construction Fund:

Mrs. Alice B. Tully.....	2,075.00
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National Science Foundation Grant.....	23,800.00
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National Institutes of Health Grant.....	8,625.00
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Carried forward	<hr/> <hr/> \$ 89,942.01
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Gifts, Grants and Legacies Received, Continued

Brought forward \$ 89,942.01

Special Projects:

American Committee for International

Wild Life Protection.....	\$ 500.00
Mrs. Anne Archbold.....	2,000.00
Mrs. F. Wilder Bellamy.....	15.00
Roger Benjamin Fund, Inc.....	50.00
Robert E. Blum.....	100.00
Robert Bacon	25.00
Miss Emily Buch.....	25.00
J. O. Bulkley.....	25.00
Kershaw Burbank	5.00
Donald F. Bush.....	10.00
Leslie Buswell	25.00
Miss Cornelia Van A. Chapin.....	25.00
C & K Dress Mfg. Co., Inc.....	25.00
The Coe Foundation.....	5,000.00
Miss Ursula Corning.....	15.00
The Corporation Trust Co.—Oakleigh Thorne...	250.00
The Conservation Foundation, Inc.....	1,500.00
Mrs. Jean A. Curran, Jr.....	100.00
Fulton Cutting	25.00
Mrs. W. F. Daniell.....	100.00
Thomas C. Desmond.....	250.00
Elinor Gay, Inc.....	25.00
Mrs. Margaret Emerson.....	300.00
George R. M. Ewing.....	25.00
James A. Farrell, Jr.....	25.00
Miss Carol G. Forbes.....	16.50
Miss Anne van N. Gamble.....	275.00
Mrs. Philip P. Gardiner.....	25.00
Paul E. Geier.....	25.00
Robert G. Goelet.....	750.00
Mrs. James L. Goodwin.....	25.00
Will C. Grant.....	1,000.00
W. E. Greene.....	10.00
Mrs. A. L. Griffon.....	5.00
W. E. S. Griswold, Sr.....	25.00
Joseph L. Haggerty, Jr.....	25.00
The Hartley Corporation.....	522.00
Miss Irene Hayes.....	100.00
Lucille Holt	500.00
Walter Hoving	15.00

Carried forward \$ 13,763.50

89,942.01

Gifts, Grants and Legacies Received, Continued

Brought forward \$ 89,942.01

Special Projects, continued:

Brought forward \$ 13,763.50

Arnold W. Hunnewell.....	15.00
Mrs. Richard Hunt.....	25.00
Mrs. Waldo Hutchins, Jr.....	25.00
Ideal Frocks	20.00
Mrs. J. Horton Ijams.....	15.00
Leon Israel, Jr.....	10.00
Walter M. Jeffords, Jr.....	200.00
Mary Brewster Jennings.....	25.00
Polly and Gilbert Kahn Foundation, Inc.....	100.00
Mrs. Robert Kavesh.....	5.00
Warren Kinney	100.00
Dr. Shepard Krech.....	25.00
Mrs. Arthur Lehman.....	50.00
George Leontios	20.00
Lower Fairfield County Guild.....	10.00
The Lyric Foundation, Inc.....	25.00
A. P. McCombs.....	100.00
Melvin B. Neisner.....	10.00
Rosewell Miller	25.00
Mrs. Lewis R. Morris.....	50.00
Mrs. Paul Mazur.....	15.00
Mrs. Charles W. Nichols, Jr.....	10.00
Mrs. Bernard Peyton, Jr.....	100.00
Mrs. Harold I. Pratt.....	15.00
Francis F. Randolph.....	25.00
Mrs. Julie Parsons Redmond.....	15.00
Mrs. Ogden Reid.....	50.00
Curt H. Reisinger.....	3,015.00
Mrs. Katharine S. Rosin.....	100.00
Mrs. A. Rutherford.....	100.00
The Scherman Foundation, Inc.....	250.00
Felix M. & Frieda Schiff Warburg Foundation...	25.00
Mrs. Joseph M. Schulte.....	5.00
Robert E. Scofield.....	5.00
Richard Shields	100.00
Sotterley Fund (Mabel S. Ingalls).....	1,000.00
Mrs. J. G. Phelps Stokes.....	25.00
Robert G. Stone.....	100.00
Daniel Denison Streeter.....	100.00
Joseph A. Thomas.....	200.00

Carried forward	\$ 19,873.50	89,942.01
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Gifts, Grants and Legacies Received, Continued

Brought forward		\$ 89,942.01
Special Projects, continued:		
Brought forward	\$ 19,873.50	
Time, Incorporated	250.00	
Ilia Tolstoy	250.00	
Mrs. M. Brown Trimble	5.00	
Mrs. Cyrus R. Vance	15.00	
Mrs. Tertius Van Dyke	15.00	
Margaret Von Herwarth	20.00	
Charles A. Van Rensselaer, Jr.	25.00	
Samuel D. Warren & Jessica D. Warren	50.00	
Washington School, Bergenfield, N. J.	10.00	
Miss Sheila L. White	15.00	
Sarah H. Whittemore	50.00	
Willoughby Little Foundation	100.00	
Dorothy Jordan Chadwick Fund	250.00	
Harry H. Webb	25.00	
Louis A. Atz	100.00	
Other	18.00	21,071.50
		<u>111,013.51</u>
Aquarium Development Fund:		
Brooklyn Borough Gas Co.	1,000.00	
Percy Chubb, II.	100.00	
John Elliott	200.00	
Childs Frick	4,812.50	
Dr. Henry Clay Frick, II.	2,842.25	
Warren Kinney	500.00	
Mr. & Mrs. David H. McAlpin	950.00	
The Schiff Foundation	5,000.00	
John M. Schiff	2,500.00	
Mrs. Martha Struburg	2.00	
The Thorne Foundation	2,000.00	
J. Watson Webb	1,000.00	20,906.75
Cancer Research:		
National Cancer Institute	9,070.00	
National Cancer Institute	5,968.00	15,038.00
General Operating Income:		
Rockefeller Brothers Fund	5,000.00	
New York Times	1,000.00	
The Chase Manhattan Bank	1,000.00	7,000.00
Aquarium Photography:		
Life, Inc.		1,000.00
The Conservation Foundation, Inc.:		
Childs Frick		9,625.00
Bermuda Government Aquarium and Museum:		
Dr. Henry Clay Frick, II.	500.00	
Childs Frick	2,000.00	2,500.00
Bermuda Biological Station for Research, Inc.:		
Childs Frick		2,000.00
		<u>\$169,083.26</u>

THE PENSION FUND

(Founded by Andrew Carnegie)

STATEMENT OF CASH TRANSACTIONS

Year ended December 31, 1958

Balance at December 31, 1957:

Investments (quoted market value \$1,602,815.38)	\$1,409,613.06
Accrued interest purchased	78.90
Uninvested balance of cash	17,243.88
	<u>1,426,935.84</u>

Receipts:

Income from investments:

Interest	\$ 22,502.94
Dividends	46,314.89
	<u>68,817.83</u>

Contributions by employees 27,651.98

Contributions by New York

Zoological Society:

Society	\$28,701.72
Facilities	7,175.41
Aquarium	5,599.41
	<u>41,476.54</u>

Special contributions	3,890.34	141,836.69
	<u> </u>	<u>1,568,772.53</u>

Expenditures:

Refunds on account of resignations	11,128.83	
Pension disbursements	40,740.28	
Pension payments to heirs of deceased employees	4,472.75	56,341.86
	<u> </u>	<u>1,512,430.67</u>

Net profit on sale of securities 50,430.43

Balance at December 31, 1958:

Investments (quoted market value \$1,841,615.41)	1,539,919.28
Accrued interest purchased	64.66
Uninvested balance of cash	22,877.16
	<u>\$1,562,861.10</u>

PEAT, MARWICK, MITCHELL & CO.

ACCOUNTANTS AND AUDITORS

Seventy Pine Street

New York 5, N. Y.

ACCOUNTANTS' REPORT

THE BOARD OF TRUSTEES

NEW YORK ZOOLOGICAL SOCIETY:

We have examined the balance sheet of New York Zoological Society as of December 31, 1958 and statements of the transactions of the various funds of the Society, including the schedules in support of such statements, and of The Pension Fund for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. As to gifts, grants and legacies (Schedule 1), it was not practicable because of their nature to extend the examination beyond accounting, on a test basis, for the receipts as recorded.

In our opinion, the accompanying balance sheet and statements of transactions of the various funds of the Society, together with the supporting schedules, present fairly the financial position of the Society at December 31, 1958 on the basis stated therein, and the changes in the funds of the Society for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

PEAT, MARWICK, MITCHELL & CO.

New York, N. Y.

March 9, 1959

REPORT OF THE AUDITING COMMITTEE OF THE NEW YORK ZOOLOGICAL SOCIETY

TO THE PRESIDENT AND BOARD OF TRUSTEES
OF THE NEW YORK ZOOLOGICAL SOCIETY

Dear Sirs:

We have examined the reports of Peat, Marwick, Mitchell & Co., Accountants and Auditors, on their examination of the balance sheet of the New York Zoological Society as of December 31, 1958, and statements of the transactions of the various funds of the Society, the Aquarium, and of The Pension Fund for the year then ended. We have noted that their examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as they considered necessary in the circumstances. The balance sheet and statements of transactions of the various funds of the Society present fairly, in their opinion, the financial position of the Society at December 31, 1958.

We accordingly submit Messrs. Peat, Marwick, Mitchell & Company's reports to you as a satisfactory examination of the balance sheet and statements of the transactions of the various funds of the Society, the Aquarium, and of The Pension Fund.

Respectfully submitted,

GEORGE F. BAKER, JR.
C. SUYDAM CUTTING
WILLIAM DEFOREST MANICE
J. WATSON WEBB

April 30, 1959

NEW YORK ZOOLOGICAL SOCIETY

INCORPORATION of the New York Zoological Society by the State of New York was accomplished under Chapter 435 of the Laws of 1895 and the basic purposes of the Society were embodied in Section 2:

Said corporation shall have power to establish, maintain and control zoological parks, gardens, or other collections for the promotion of zoology and kindred subjects, and for the instruction and recreation of the people. Said corporation may collect, hold and expend funds for zoological research and publication, for the protection of wild animal life, and for kindred purposes, and may promote, form, and co-operate with other associations with similar purposes, and may purchase, sell, or exchange animals, plants, and specimens appropriate to the objects for which it was created.

Subsequently, at a special meeting of the Commissioners of the Sinking Fund, City of New York, held on March 24, 1897, a resolution was passed allotting South Bronx Park for the use of the New York Zoological Society and establishing the terms of a management agreement under which the Society has operated since that date, with only minor modifications.

The resolution of March 24, 1897, and the supplemental agreement of January 24, 1942, provided that the Society should furnish the original equipment of buildings and animals, that it should raise \$250,000 by subscription within three years of the date of starting work on the improvement of the grounds, that the Society should have the right to establish an endowment fund to be used solely for the general uses and purposes of the Society unless otherwise specified by the donors, that the City of New York should provide funds for the maintenance and care of the Zoological Park and for the maintenance of the animal collections, that the Zoological Park should be open to the public free at least four days a week, that the Society may expend the net proceeds of facilities only for the purchase of animals and the improvement of the Zoological Park and that the Society should have the right to make and control all appointments of employees and to fix salaries and make promotions.

NEW YORK ZOOLOGICAL SOCIETY

Organized 1895

Presidents

I. ANDREW H. GREEN	1895 to 1897
II. LEVI P. MORTON	1897 to 1909
III. HENRY FAIRFIELD OSBORN	1909 to 1925
IV. MADISON GRANT	1925 to 1937
V. W. REDMOND CROSS	1937 to 1940
VI. FAIRFIELD OSBORN	1940

First Vice-presidents

I. J. HAMPTON ROBB	1895 to 1897
II. HENRY FAIRFIELD OSBORN	1897 to 1909
III. SAMUEL THORNE	1909 to 1916
IV. MADISON GRANT	1916 to 1925
V. FRANK K. STURGIS	1925 to 1932
VI. W. REDMOND CROSS	1932 to 1937
VII. KERMIT ROOSEVELT	1937 to 1939
VIII. ALFRED ELY	1939

Second Vice-presidents

I. CHARLES E. WHITEHEAD	1895 to 1902
II. JOHN L. CADWALADER	1902 to 1915
III. MADISON GRANT	1915 to 1916
IV. FRANK K. STURGIS	1916 to 1925
V. HENRY D. WHITON	1925 to 1930
VI. KERMIT ROOSEVELT	1930 to 1937
VII. ALFRED ELY	1937 to 1939
VIII. LAURANCE S. ROCKEFELLER	1939

Honorary Vice-president

I. DEFORREST GRANT	1957
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Treasurers

I. L. V. F. RANDOLPH	1895 to 1901
II. CHARLES T. BARNEY	1901 to 1903
III. PERCY RIVINGTON PYNE	1903 to 1922
IV. CORNELIUS R. AGNEW	1922 to 1953
V. DAVID H. McALPIN	1953

Secretaries

- I. MADISON GRANT1895 to 1925
- II. WILLIAM WHITE NILES1925 to 1935
- III. FAIRFIELD OSBORN1935 to 1940
- IV. HAROLD J. O'CONNELL1941

Chairmen, Executive Committee

- I. CHARLES E. WHITEHEAD1895 to 1896
- II. HENRY FAIRFIELD OSBORN1896 to 1903
- III. CHARLES T. BARNEY1903 to 1907
- IV. HENRY FAIRFIELD OSBORN1907 to 1909
- V. MADISON GRANT1909 to 1937
- VI. W. REDMOND CROSS1937 to 1940
- VII. LAURANCE S. ROCKEFELLER1940 to 1943
- VIII. FAIRFIELD OSBORN1943 to 1945
- IX. LAURANCE S. ROCKEFELLER1945

Directors

- I. WILLIAM T. HORNADAY
Zoological Park1896 to 1926
- II. CHARLES H. TOWNSEND
New York Aquarium1902 to 1937
- III. W. REID BLAIR
Zoological Park1926 to 1940
- IV. ALLYN R. JENNINGS
Zoological Park1940 to 1941
- V. CHARLES M. BREDER, JR.
New York Aquarium1937 to 1943
- VI. JOHN TEE-VAN
Zoological Park1952
General Director, Zoological Park & Aquarium. 1956
- VII. CHRISTOPHER W. COATES
New York Aquarium1956
- VIII. JAMES A. OLIVER
Zoological Park1958

BOARD OF TRUSTEES

City of New York

Ex-officio

HON. ROBERT F. WAGNER, *The Mayor*

HON. ROBERT MOSES, *Commissioner of Parks*

Class of 1959

ARCHIBALD S. ALEXANDER

A. RAYMOND DOCHEZ

PETER GIMBEL

ROBERT G. GOELET

DEFOREST GRANT

EUGENE HOLMAN

WARREN KINNEY

WILLIAM DEFOREST MANICE

HAROLD J. O'CONNELL

LONDON K. THORNE

J. WATSON WEBB

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PERCY CHUBB, 2ND

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CHILDS FRICK

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PETER GRIMM

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FAIRFIELD OSBORN

EBEN PYNE

LAURANCE S. ROCKEFELLER

JOHN M. SCHIFF

HENRY SEARS

JOSEPH A. THOMAS

OFFICERS OF THE SOCIETY

FAIRFIELD OSBORN, *President*

ALFRED ELY & LAURANCE S. ROCKEFELLER
Vice-presidents

DEFOREST GRANT, *Honorary Vice-president*

HAROLD J. O'CONNELL, *Secretary*

DAVID H. MCALPIN, *Treasurer*

EBEN PYNE, *Assistant Treasurer*

General Office: 30 East 40th Street, New York 16, N. Y.

EXECUTIVE COMMITTEE

LAURANCE S. ROCKEFELLER, *Chairman*

GEORGE F. BAKER, JR.

JOHN ELLIOTT

ALFRED ELY

PETER GIMBEL

ROBERT G. GOELET

DEFOREST GRANT

DAVID H. MCALPIN, *ex-officio*

ROBERT MOSES, *ex-officio*

HAROLD J. O'CONNELL, *ex-officio*

FAIRFIELD OSBORN, *ex-officio*

PENSION BOARD

FAIRFIELD OSBORN, *Chairman*

FRED ARCHER

PERCY CHUBB, 2ND

CHRISTOPHER W. COATES

ALFRED ELY

WARREN KINNEY

DAVID H. MCALPIN

JAMES A. OLIVER

EBEN PYNE

HERBERT F. SCHIEMANN

JOHN TEE-VAN

COMMITTEES OF THE SOCIETY

NOMINATING COMMITTEE FOR BOARD OF TRUSTEES

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ELY WHITNEY DEBEVOISE

SAMUEL THORNE

FINANCE COMMITTEE

DAVID H. MCALPIN, *ex-officio, Chairman*

JOHN ELLIOTT

FAIRFIELD OSBORN, *ex-officio*

EBEN PYNE

JOHN M. SCHIFF

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GEORGE F. BAKER, JR., *Chairman*

C. SUYDAM CUTTING

FAIRFIELD OSBORN, *ex-officio*

WILLIAM DEFOREST MANICE

J. WATSON WEBB

HAROLD J. O'CONNELL, *ex-officio*

EDITORIAL COMMITTEE

FAIRFIELD OSBORN, *Chairman*

JAMES W. ATZ

WILLIAM G. CONWAY

WILLIAM BEEBE

LEE S. CRANDALL

WILLIAM BRIDGES

JAMES A. OLIVER

CHRISTOPHER W. COATES

JOHN TEE-VAN

SCIENTIFIC ADVISORY COUNCIL

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CARYL P. HASKINS

ALFRED EMERSON

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W. A. HAGAN

HEADS AND HORNS COMMITTEE

ALFRED ELY, *Chairman*

LAURANCE S. ROCKEFELLER

F. CARRINGTON WEEMS

SAMUEL B. WEBB

STAFF

JOHN TEE-VAN, *General Director, Zoological Park and Aquarium*

ZOOLOGICAL PARK

JAMES A. OLIVER, *Director & Curator, Reptiles*

JOSEPH A. DAVIS, JR., *Assistant Curator, Mammals*

WILLIAM G. CONWAY, *Curator, Birds*

GRACE DAVALL, *Assistant Curator, Mammals & Birds*

CHARLES P. GANDAL, *Veterinarian*

GORDON CUYLER, *Membership Chairman & Administrative Associate*

HERBERT J. KNOBLOCH, *Associate Curator, Education*

CHARLES B. DRISCOLL,

Superintendent, Construction & Maintenance

EDWARD KEARNEY, *Manager, Facilities Department*

LEE S. CRANDALL, *General Curator Emeritus*

WILLIAM BEEBE, *Honorary Curator, Birds*

AQUARIUM

CHRISTOPHER W. COATES, *Director*

CARLETON RAY, *Assistant to the Director*

JAMES W. ATZ, *Associate Curator*

ROSS F. NIGRELLI, *Pathologist & Chairman,
Department of Marine Biochemistry & Ecology*

SOPHIE JAKOWSKA, *Research Associate in Experimental Biology*

MYRON GORDON, *Geneticist*

C. M. BREDER, JR., *Research Associate in Ichthyology*

HARRY A. CHARIPPER, *Research Associate in Histology*

HOMER W. SMITH, *Research Associate in Physiology*

DEPARTMENT OF TROPICAL RESEARCH

WILLIAM BEEBE, *Director Emeritus*

JOCELYN CRANE, *Assistant Director*

HENRY FLEMING, *Entomologist*

DAVID W. SNOW, *Resident Naturalist*

WILLIAM K. GREGORY, *Associate*

JOHN TEE-VAN, *Associate*

GENERAL

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THE NEW YORK ZOOLOGICAL SOCIETY was founded in 1895 for the "instruction and recreation of the people" through the establishment of a Zoological Park, for the promotion of zoology through exhibition of collections, publication, research and exploration, and for the conservation of animal life of the world. Since 1899 the Zoological Society has directed the New York Zoological Park and in 1902 it was entrusted with the management of the New York Aquarium.

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 Blair, Wiley, Jr.
 Butterworth, Frank, Jr.
 Chapin, Miss Cornelia Van A.
 Clarke, Mrs. Dumont
 Compton, Mrs. Randolph P.
 Desmond, Hon. Thomas C.
 de Vegvar, Mrs. C. Neuman
 Doubleday, James M.
 Downs, Dr. Wilbur
 Du Nouy, Mrs. Lecomte
 Erickson, Mrs. A. W.
 Gilbert, Mrs. Benjamin D.
 Glazier, Henry S., Jr.

Grosvenor, Melville B.
 Gulick, Archibald A.
 Harriman, Mrs. E. Roland
 Heinz, Henry J., II
 Heyman, Mrs. David M.
 Holmes, Miss Helen M.
 Huntington, Mrs. Archer M.
 Kinney, Mrs. Warren
 Kissel, Mrs. W. Thorn
 Leffingwell, Russell C.
 McElroy, Mrs. Thora Ronalds
 Otto, Elmer C.
 Peabody, Miss Amelia
 Perkins, George W.
 Perkins, Mrs. George W., Sr.
 Pierrepont, John
 Pierrepont, Mrs. R.
 Stuyvesant

Poor, Mrs. Walter S.
 Post, Mrs. John E.
 Randolph, Mrs. S. B.
 Rice, Mrs. A. Hamilton
 Rockefeller, William A.
 Scherman, Mrs. Harry
 Scholle, William D.
 Spalding, Mrs. Albert
 Stuyvesant, Peter
 Terry, John T.
 Tucker, Mrs. Carl
 Vanderbilt, William H.
 Van Orden, Miss Joan
 Walker, Miss Miriam Dwight
 Wilson, Orme
 Yohai, Morrie R.

Contributing Members

Abrahams, Henry B.
 Abramovitz, Max
 Addinsell, H. M.
 Adelson, Richard H.

Adkins, Leonard D.
 Albright, Horace M.
 Aldridge, Mrs. Walter H.
 Alexander, Archibald G.

Alexander, Miss Helen D.
 Allee, Mrs. John P.
 Allega, Richard
 Allen, Mrs. Charles, Sr.

*Deceased

Allen, Charles, Jr.
 Allen, Ethan
 Allen, Mrs. Ethan
 Allen, Mrs. Frederick L.
 Allen, John B. E.
 Allen, Reginald
 Amory, Mrs. Copley
 Anderson, Dr. Arthur F.
 Anderson, George A.
 * Andrews, De Lano
 Anthony, Mrs. Paul L.
 Appel, Mrs. George I.
 Appel, Miss Nancy
 Appleton, Francis R., Jr.
 Arbus, Ralph
 Arkell, W. C.
 Arnold, Miss Frances
 Aron, Jack R.
 Askin, Mrs. Arnold S.
 Astor, Mrs. Vincent
 Atkins, Dr. Elsha
 Atwood, Kimball C., Jr.
 Ault, Mrs. Lee
 Avildsen, Clarence
 Ayer, Charles F.
 Ayer, Charles J.
 Babbott, Dr. Frank L.
 Babcock, Robert O.
 Bache, Harold L.
 Bachrach, Clarence G.
 Bacon, Rogers H.
 Baker, Hugh B.
 Baker, Louis C.
 Baker, Walter C.
 Ballard, Miss Amy Hope
 Baltuch, Herbert
 Barach, Dr. Alvan L.
 Bareiss, Mrs. Walter
 Barnard, Chester I.
 Barnes, H. H., Jr.
 Barnes, Richard S.
 Barnett, Arthur L.
 Barry, William D.
 Bartholomew, Dana T.
 Bartram, Miss Evelyn
 Bartram, Mrs. J. Burr
 Bateson, E. Farrar, Jr.
 Batterman, Henry L.
 Bauer, Bernard
 Baumann, Walter S.
 Beach, Edwin E.
 Beal, George J.
 Beard, Anson
 Beekman, Dr. Fenwick
 Begrisch, Frank
 * Beinecke, Walter
 Belmont, Mrs. August
 Belmont, Lt. Joseph P.
 Belth, Herman
 Benenson, Mrs. Nettie
 Bennett, Mrs. George K.
 Bennett, Mrs. Graham L.
 Bennett, Walter C.
 Bent, George Payne II
 Bent, Mrs. Walter C.
 Bergerman, Melbourne
 Berk, David
 Berlin, Mrs. F. Henry, Jr.
 Bernhard, Richard J.
 Bernheim, George B.
 Bernheim, Mrs. Henry J.
 Berns, Charles A.
 Bernuth, Charles M.
 Bieberman, David
 Bieher, Siegfried
 Blagden, Crawford
 Blagden, Mrs. F. M.
 Blick, John C.
 Bliss, Anthony A.
 Bliss, Miss Susan Dwight
 Bloom, Mrs. William O.
 Boettger, Theodore
 Boggs, Dr. Robert
 Bonney, Mrs. L. W.
 Boocock, Kenyon
 Booth, Mrs. Robert C.
 Borgstede, Miss J. Dorothy
 Borish, Mrs. M. E.
 Bourne, Miss Grace E.
 Boylan, Mrs. Anne
 Boyle, Gerald M.
 Bradford, Mrs. Amory H.
 Bradley, J. L.
 Bradley, Montgomery S.
 Brady, Nicholas F.
 Braga, B. Rionda
 Brandi, Frederic H.
 Braunstein, Victor
 Breed, Dr. Eben
 Brewer, Mrs. George E., Jr.
 Brewster, Benjamin
 Brewster, Edward C.
 Brewster, Mrs. Warren
 Briggs, Miss Janet Zaph
 Britwitz, Louis
 Browne, Gilbert G.
 Bruce, Mrs. Mellon
 Bruckmann, John C.
 Bruell, Frederick M.
 Bryce, Mrs. John F. C.
 Buckner, Mrs. W. G.
 Bulkley, J. O.
 Bulkley, Mrs. J. Ogden
 Bullock, Mrs. Hugh
 Bunker, Mrs. Antoinette M.
 Bunker, Arthur H.
 Burbank, Kershaw
 Burch, Lowell R.
 Burden, Mrs. I. Townsend, Jr.
 Burgard, Frederick W.
 Burlingham, Charles
 Burns, H. S. M.
 Burns, Mrs. Robert E.
 Burton, Howes
 Bush, Mrs. D. Fairfax
 Butt, John D.
 Byng, Mrs. Henry G.
 Callan, William
 Camman, Mrs. H. Schuyler
 Campbell, Hilton R.
 Campbell, Mrs. Joseph
 Canfield, Cass
 Canfield, Mrs. Cass
 Cary, Mrs. C. Reed
 Casamajor, Dr. Louis
 * Cass, Charles Anderson
 Cates, Louis S.
 Chamberlain, James R.
 Chamberlin, Mrs. W. Macy
 Chandler, Mrs. Percy M.
 Chase, Hamilton M.
 Cheevers, Dr. Owen J.
 Chenery, Christopher T.
 Chenery, Mrs. William L.
 Chew, Mrs. Philip F.
 Child, Miss Ruth Auchincloss
 Childs, Mrs. Eversley, Jr.
 Choate, Mrs. Arthur O.
 Choate, Arthur O., Jr.
 Christie, Lansdell K.
 Chubb, Hendon
 Chubb, Mrs. Percy
 Chute, Miss Joy
 Cioffi, Frank
 Clark, Mrs. Blair
 Clark, David C.
 Clark, Mrs. Donaldson
 Clark, Mrs. Huguette M.
 Clark, James C.
 Clark, Mrs. LeRoy
 Clark, Mrs. Stephen C.
 Clark, Mrs. William Andrews

Clarkson, Jesse D.
 Clarkson, Mrs. Robert L.
 * Clausen, George
 * Clayburgh, Mme. Alma
 Clements, Theron A.
 Coakley, Mrs. Henry B.
 Cohane, John P.
 Cohane, Mrs. Mimi
 Cohen, Morris
 Cohn, Benno
 Coleman, Leighton
 Coleman, Stewart P.
 Congdon, G. Maurice
 Connally, M. G.
 Connelly, Albert R.
 Conroy, Mrs. William H.
 Cook, Mrs. Alfred A.
 Cook, Mrs. Hobart
 Cook, Dr. John S.
 Cooper, Dr. Henry S.
 Fenimore
 * Corlies, Howard
 Corning, Mrs. H. K.
 Corning, Miss Ursula
 Correll, Mrs. James W.
 Cottin, Jack
 Cowett, Mrs. Wilbur A.
 Coykendall, Mrs. William E.
 Crane, Mrs. Murray
 Crawford, Frank Russell
 Crispell, Reuben B.
 Cromwell, Jarvis
 Cronson, Dr. Alvin J.
 Crookes, George D.
 Cross, Dr. Richard J.
 Cruger, Frederic H.
 Cumming, C. N. Wentworth
 Cumming, Mrs. Laurence
 Curran, Mrs. Guernsey
 Curren, Mrs. Jean A., Jr.
 Currier, Mrs. Stephen
 Curtis, Mrs. Edward P.
 Cutting, Dr. Fulton
 Czajkowski, Dr. J. Richard
 Damrosch, Dr. Douglas S.
 Darling, Jay N.
 Darrow, Whitney
 Dater, Mrs. Alfred W.
 Davenport, Mrs. Frederick M.
 Davey, Miss Carolyn
 Davies, Frederick M.
 Davies, Mrs. J. Clarence
 Davis, Miss Marion
 Davis, Dr. William E.

Davison, Mrs. Henry Pomeroy
 Davisson, William Porter
 Day, Clarence
 Day, Watson Beach
 Debevoise, Paul
 Debevoise, Thomas M.
 de Camp, William D.
 de Jongh, Mrs. D. Crena
 Delacorte, George T., Jr.
 Delano, Mrs. Lyman
 de Marinis, Dr. M. Joseph
 Devereux, Alvin
 Dick, John H.
 Dick, Mrs. William K.
 Dickey, Mrs. Charles D.
 Dietz, Gerry J.
 Dillon, C. Douglas
 Dillon, Mrs. Clarence
 Dodd, Miss Natalie M.
 Dodge, Cleveland E.
 Dodge, Donald D.
 Dominick, Mrs. G. G.
 Donaldson, Coleman duPont
 Donnenfeld, Dr. Alvin M.
 Dorland, Mrs. M. M.
 Doubleday, G. Chester
 Dougherty, William A.
 Douglass, Mrs. Truman
 Bartlett
 Downey, John I.
 Downs, Mrs. Wilbur
 Duffy, Mrs. Marguerite E.
 Duke, Miss Doris
 Dumaresq, John E.
 Dunaif, Mrs. Samuel
 Du Pont, Henry F.
 Du Pont, Irene
 Duvernoy, Russell E.
 Dvorin, Bob
 Dwight, Mrs. Winthrop E.
 Eckart, Edmund
 Eder, Phanor J.
 Edgar, George
 Edmonds, Dean S.
 Egan, Edward W.
 Eggers, Mrs. Carl
 Eisen, Dr. Nathan
 Eisner, Gerald
 Elliott, Mrs. John, Jr.
 Elliott, Mrs. Osborn
 Ellsworth, Duncan S.
 Ellsworth, John S., Sr.
 Ely, Mrs. G. Page
 Emanuel, Henderson

Embury, Edward Coe
 Engle, George D.
 Erdmann, Dr. Albert J., Jr.
 Erickson, Mrs. A. W.
 Ernst, Howard M.
 Erskine, Howard M.
 Eskesen, Mrs. T. R.
 Essman, Leonard J.
 Eustis, Allan C., Jr.
 Evans, Mrs. Alice R.
 Evans, Mrs. John C.
 Evans, Mrs. L. T.
 Fairchild, Mrs. L. W.
 Farrell, James A., Jr.
 Faulkner, Mrs. F. Sheffield
 Ferber, Fred
 Ferenczy, Dr. Alexander, Jr.
 Ferguson, Mrs. Florence R.
 Ferguson, Miss Frances
 Field, Malcom G.
 Filley, Mrs. Oliver D.
 Finkle, Joel
 Finneran, Edward T.
 Fisher, Henry J.
 Fisk, Mrs. Shirley C.
 Fitzhugh, J. Perry
 Fitzhugh, Miss Marion E.
 Flagg, W. A.
 Flagg, Mrs. W. A.
 Flandrau, Mrs. Blair
 Flanigan, Horace C.
 Fong, Dr. Harry Y.
 Foote, Mrs. William
 Ford, Mrs. Howeth T.
 Fortunato, D.
 Fowler, Miss Ann A.
 Francescatti, Zino
 Frank, William K.
 Fraser, John
 Frederick, Mrs. Leopold
 Freeman, Mrs. Edward W.
 Freese, Fred J.
 Frick, Mrs. Henry Clay
 Fromm, S. W.
 Fry, Morton H.
 Fuller, Samuel L.
 Gales, Mrs. Seaton
 Galpin, Samuel A.
 Galpin, Mrs. Samuel A.
 Gamble, Miss Anne Van N.
 Gamble, Mrs. David S.
 Gamble, Mrs. Sidney
 Gambrill, Mrs. Richard
 Gardiner, Mrs. Philip P.

*Deceased

Gardner, Mrs. Paul E.
 Garner, Master Thomas F., Jr.
 Garnjost, Mrs. Frederick W.
 Garvan, Mrs. Francis P.
 Gates, Mrs. Natalie
 Gay, Edward R.
 Gaylord, Robert M.
 Geis, George F.
 Gelsthorpe, Edward
 Germond, Paul D.
 Gibbons, Dr. Donald M.
 Gieringer, Laurence T.
 Gilbert, Mrs. Fitch
 Gillmore, Mrs. Henry van K.
 Gimbel, Bernard F.
 Gimbel, Mrs. Bernard F.
 Ginsberg, Robert K.
 Glazier, William S.
 Golden, Mrs. Donn
 Goldman, Richard S.
 Goldsmith, C. E.
 Goldsmith, Dr. Herbert S.
 Goldsmith, Richard
 Goldsmith, S. Delvalle
 Goodman, Avrom M.
 Goodwin, James L.
 Goodyear, Mrs. A. C.
 Gordon, Albert H.
 Gordon, Mrs. A. H.
 Gordon, Mrs. John D.
 Gordon, Kermit
 Grace, Oliver R.
 Graf, William
 Graff, Miss Lois Manton
 Graham, E. B.
 Graham, William J.
 Graustein, Archibald R.
 Graves, Duncan
 Gray, Reginald
 Gray, Mrs. Thomas H., Jr.
 Green, Sheldon R.
 Greenberg, Jerrold
 Greenfield, Frederick Wm.
 Greengold, Aaron
 Greenleaf, L. S., Jr.
 Gregg, Albert H.
 Griffin, William J., Jr.
 Grimson, Mrs. S. B.
 Griswold, Mrs. John S.
 Groedel, Harry
 Groopman, Dr. Samuel F.
 Grossman, Mrs. Cyrus B.
 Groth, Edward, Jr.
 Gudernatsch, Dr. F.

Gunster, Mrs. Joseph F.
 Guthrie, Henry B.
 Haas, George C.
 Hadley, Morris
 Hale, Mrs. Roger D.
 Hall, Mrs. John H.
 Hollowell, N. Penrose
 Halls, Mrs. William, Jr.
 Halsband, Mrs. Robert
 Halsted, Mrs. Harbeck
 *Hamann, Mrs. William A.
 Hamburger, Lloyd
 Hamerslag, Robert J.
 Hamill, Mrs. R. L.
 Hamlin, Chauncey J.
 Hampshire-Silver, Dr. Alice
 Hansen, Arthur W.
 Hansen, Mrs. Helen W.
 Hanway, William A.
 Hardy, Dr. Edward A.
 Hardy, Brig. John H.
 Harper, John
 Harriman, Mrs. W. Averell
 Harris, Charles C.
 Harris, Duncan G.
 Harrison, Mrs. Alfred C.
 Hart, Stanley
 Hartz, John E.
 Haskins, Mrs. Caryl P.
 Hatch, Mrs. Harold A.
 Hathaway, Stewart S.
 Hatvany, Miss Antonia
 Hays, Mrs. Edwin D.
 Heimann, Mrs. Richard
 Heineman, Bernard
 *Heintz, John E.
 Heller, Tobias
 Heller, William B.
 Heller, William G.
 Helme, Edward
 Henderson, Dr. Edward
 Henshel, Mrs. Harry B.
 Herman, Dr. John R.
 Herr, Miss Mary E.
 Herrick, Newbold L.
 Hess, Mrs. Thomas B.
 Hessberg, Edward K.
 Hesse, Miss Anne Barbara
 Hesse, Mrs. H. G.
 Hesse, Miss Janet
 Hewitt, Mrs. Thomas D.
 Heyd, Dr. Charles Gordon
 Heyde, Ernest R.

Heymsfeld, Ralph T.
 Higginson, Mrs. Thomas L.
 Hillas, James R., Jr.
 Hillas, Miss Marjorie
 Hills, Mrs. James M.
 Hird, Henry E.
 Hird, Miss Martha
 Hird, Samuel
 Hirshberg, Eliot P.
 Hitchcock, Mrs. Thomas
 Hoffman, F. Burrall
 Hoffman, John E.
 Hoffman, William W.
 Holbrook, Robert D.
 Holmes, Carl
 Holsapple, Earle T.
 Homewood, Mrs. Brooke
 Hooper, John W.
 Hopkins, Mrs. Peter S.
 Houghton, Arthur A., Jr.
 Hoving, Walter
 Howard, George H.
 Howard, Mrs. Howell
 Howe, Dr. Calderon
 Howell, W. Hunting
 Hubbard, Allen S.
 Hubbard Richard L.
 Huffard, Paul P.
 Humphreys, Miss Dena
 Hun, Samuel Hand
 Hunt, Mrs. Richard C.
 Huntington, Miss
 Elizabeth Q.
 Hutchins, Mrs. Waldo, Jr.
 Hyman, Mrs. Abraham
 Hyman, Harry A.
 Hynson, Mrs. James N.
 Igleheart, Austin S.
 Ijams, Mrs. J. Horton
 Immerblum, Mrs. Edward
 Irwin, William F.
 Isbrandtsen, Mrs.
 Gertrude M.
 Iselin, O'Donnell
 Isenberg, A. H.
 Israel, Leon, Jr.
 Isreeli, Jack
 Jackson, Mrs. Clifford L.
 Jackson, Mrs. David S.
 Jackson, Frederick W.
 Jacobi, Lester E.
 Jacobs, Edwin L.
 James, Mrs. Bayard

Jennings, Mrs. B. B.
 Johnson, F. Raymond
 Johnson, J. Ford
 Johnson, Mrs. Wayne
 Jones, C. Maury
 Jones, Clayton B.
 Jones, Kenneth A.
 Jones, Lester
 Jones, Roy E.
 Jones, Miss Ruth W.
 Josephs, Mrs. Devereux C.
 Kaplan, M. C.
 Karselsen, Frank E.
 Karl, Dr. Richard C.
 Katz, Al
 Kean, Robert W., Jr.
 Kean, Robert Winthrop
 Kennedy, Mrs. Arthur
 Kennedy, Mrs. Mildred T.
 Kent, Mrs. Richard Peabody
 Kessler, Joseph N.
 Kessler, Dr. Walter R.
 Kienbusch, Carl O.
 Kilborne, R. Stewart
 Kilham, Dr. Lawrence
 Kim, William
 Kimmel, Everett
 King, Charles Glen
 *King, Frederick P.
 Kingsford, Irving B.
 Kingsley, Darwin P., Jr.
 Kinkead, Miss Elsie H.
 *Kinkead, Miss Jennie H.
 Kirchheimer, Mrs. Joseph M.
 Kirkham, Dr. Frederic T., Jr.
 Kirkham, William B.
 Kirkland, Mrs. William R., Jr.
 Kiuttu, Charles
 Knaplund, Paul W.
 Knapp, Dr. Philip
 Kneeland, Mrs. Yale, Jr.
 Knight, Dr. George H. H.
 Knight, Mrs. Iris D.
 Knight, Rufus H.
 Knobloch, Henry F. J.
 Knudsen, Th. R.
 Koloski, Bruce
 Kospelson, Mrs. Kenneth
 Kosmak, Mrs. George W.
 Kraemer, Alfred Robert
 Kranz, Dr. Karl
 Kratovil, Mrs. Emil
 *Krumb, Henry
 Lamont, Mrs. Corliss

*Deceased

Lande, George
 Landeck, Walter V.
 Landis, Kendall
 Lane, Mrs. William H.
 Lanman, Dr. Jonathan T.
 Lapovsky, Dr. Arthur J.
 Larkin, Frank Y.
 Lauderdale, Dr. Vance, Jr.
 Laughlin, Thomas I.
 Lavac, Mrs. Iris
 Lawrence, Mrs. James F.
 Lea, Mrs. Robert Brooke
 Leach, Henry Goddard
 Leavenworth, Mrs. Ellis W.
 Lee, Mrs. Gypsy Rose
 Lee, James T.
 Lehman, Mrs. Herbert H.
 Leonhardt, F. H.
 Leoni, Robert E.
 Lerch, F. H., Jr.
 Leslie, William, Jr.
 Lester, Dr. Jane
 Levey, Charles Bispham
 Levey, Miss Margaret
 Bispham
 Levi, Julian Clarence
 Levin, N. W.
 Levitt, Mrs. Edward T.
 Levy, Dr. David M.
 Levy, M. William
 Lewis, George W.
 Liberman, Mrs. James B.
 Lidicker, William Z.
 Lilly, Mrs. J. K.
 Lincoln, Mrs. William A.
 Linder, Harold F.
 Linder, Dr. Jerome M.
 Lippencott, Miss Janet S.
 Lister, Miss Geraldine T.
 Litchfield, Edward S.
 Livingston, Miss Anna P.
 Livingston, John H.
 Llavallol, Jaime
 Lockwood, Luke B.
 Loeb, Henry A.
 Loeb, John L.
 Logan, Miss Florence L.
 London, Mrs. Robert
 Lovett, Mrs. Robert A.
 Low, Mrs. Madeleine M.
 Low, Mrs. Marianne H.
 Lowenstein, Leo
 Lyeth, J. M. Richardson

Maass, Mrs. Richard
 Macgrath, C. Richard
 Madigan, Mrs. Thomas F.
 Magid, Leon
 Magie, James McCosh
 Magrane, John S.
 Mali, Mrs. Henry J.
 Mallory, Mrs. Clifford D.
 Manheim, Frank J.
 Manice, Mrs. William
 DeForest
 Manny, W. Roy
 Marie, Miss Adele
 Marks, Carl
 Marsteller, Miss L. Geraldine
 Marston, Edgar J.
 Martin, Alastair B.
 Martin, H. Bradley
 Martin, Shelton E.
 Martin, Mrs. Shelton E.
 Martini, Mrs. Fred
 Mathus, Dr. Francis T.
 Matthews, Mrs. Flagler
 Matthiessen, Erard A.
 Maude, Mrs. E. F.
 May, Mrs. Charles H.
 Mayer, Mrs. Edgar
 Mayer, John
 Mayer, Mrs. John
 Mayer, Mrs. John A.
 Mayer, Myron
 Maynard, Richard S.
 Mazur, Mrs. Paul
 Mazzia, Dr. Valentino D. B.
 McCaffrey, James John
 McCanliss, Lee
 McCann, Jonathan W.
 McClintock, Gilbert S.
 McClung, Richard G.
 McCombs, Dr. A. P.
 McCormack, Mrs. Alfred
 McCormick, Miss Mildred
 McDonnell, Hubert
 McGee, Clifford W.
 McKay, Mrs. Robert G.
 McKee, Robert E.
 McLane, Huntington
 McLane, Mrs. Huntington
 McNulty, Harold C.
 McQuillen, Paul W.
 McVeigh, Mrs. Charles S.
 Meade, George P.
 Meagher, Edward C.
 Mechin, R. J.

Meeder, William H., Jr.
 Meek, Mrs. Samuel W.
 Mejia, Edwin J.
 Mejia, Mrs. Edwin J.
 Mellon, Miss Eleanor M.
 Mellon, Mrs. G. A.
 Mendell, Mrs. Margaret P.
 Merrill, F. Hamilton, Jr.
 Merritt, Dr. Katharine
 Merritt, Mrs. Walter Gordon
 Meyer, Maurice, Jr.
 Migel, Richard H.
 Miles, Mrs. E. W.
 Miller, Roswell
 Millhauser, Mrs. De Witt
 Mills, Dudley H.
 Milmine, Mrs. George P.
 Milmine, Miss Katherine
 Milton, Oliver M. B.
 Minor, Mrs. Clark H.
 Minotta, Miss Rita
 Mitchell, Cornelius
 Mobley, Nathan
 Model, Mrs. Jean
 Moench, Gerard L.
 Mogul, Capt. Robert
 Mohun, C. Peabody
 Moore, Garry
 Moore, George G., Jr.
 Moore, Mrs. Louis De B.
 Moose, Edward
 Moran, Eugene F., Jr.
 Morawetz, Herbert
 Morehead, John M.
 Morgan, Henry S.
 Morris, Dr. Robert H.
 Mortimer, Mrs. Stanley G., Jr.
 Mosenthal, Mrs. Herman O.
 Moses, Mrs. Henry L.
 Muir, Malcolm
 Munroe, Miss Antonia
 Munroe, Mrs. Vernon, Jr.
 Myers, Mrs. Cornell
 Myerson, Joseph G.
 Mylod, Charles J.
 Nathanson, Mrs. M. B.
 Nehrbas, Harold A.
 Nelkin, Morton
 Nelson, Mrs. Warren O.
 Nestel, Walter
 Neuberger, Roy R.
 Newburger, Com. Morton J.
 Newton, Edward K.
 Newton, Maurice

Nichols, Charles W., Jr.
 Nichols, Mrs. Charles W., Jr.
 Nichols, Mrs. George
 Nichols, Mrs. Morton C.
 Nicholson, Mrs. G. J. Guthrie
 Nickou, Constantine
 Nields, John W.
 Nisselbaum, Charles B.
 Noerr, Robert
 Nourse, Mrs. Charles J.
 Nyden, Gustaf A.
 Nyselius, Gustav
 Oastler, Mrs. Frank R.
 Oeste, Miss Marion
 Olmsted, Mrs. Henry C.
 Ordway, Miss Ellen
 Ordway, Miss Katharine
 Osborn, Earl D.
 Osborn, Mrs. Frederick
 Osborne, Mrs. Dean C.
 Ostroga, Seymour
 O'Sullivan, G. H.
 Outerbridge, Frank R.
 Page, Robert G.
 Paine, Hugh E.
 Painter, Carl W.
 Paley, William S.
 Paley, Mrs. William S.
 Palmer, Mrs. Carleton H.
 Parish, R. L.
 Parsons, Miss Katharine deB.
 Payson, Mrs. Charles S.
 Peabody, James Bishop
 Pease, Perry R.
 Peck, A. Wells
 Peck, Mrs. Samuel A.
 Pennoyer, Mrs. Paul G.
 Perrin, Lester W.
 *Pforzheimer, Carl H.
 Phipps, John S.
 Pierson, Henry L.
 Pinney, Edward S.
 Pitt, Mrs. Malcolm
 Plimpton, Mrs. F. T. P.
 Plohn, Charles
 Poe, Miss Frances
 Pollard, L. Douglas
 Pool, Dr. Lawrence
 Porter, Hugh
 Porter, Mrs. Lisa
 Post, William G.
 Potter, Warwick
 Pottier, Auguste R.
 Poveromo, Vito A.

Pratt, Auguste G.
 Pratt, H. Irving
 Pratt, John T., Jr.
 Pratt, Richardson
 Pratt, Mrs. Richardson
 Pratt, Sherman
 Prescott, Orville
 Principato, Dr. Dominick J.
 Pruyn, Dr. F. Morgan
 Puckhafer, George R.
 Pye, Dr. Orrea F.
 Quigly, Miss Elsie Jean
 Radley, Mrs. John J.
 Ramsing, Mrs. Thor H.
 Rasmus, William T.
 Ratcliffe, George L.
 Raynolds, Mrs. David R.
 Reid, Mrs. William H.
 Reisser, Dr. Otto H.
 Rentschler, Mrs. Gordon S.
 Resor, Stanley R.
 Revedin, Marchesa M.
 Rhoads, Dr. Cornelius P.
 Richard, Mrs. Harold C.
 Richards, Archibald M.
 Richards, Mrs. Lloyd
 Richardson, David L.
 Riley, Mrs. James W.
 Ripley, James H.
 Ripley, Julien A.
 Ritchie, Alfred A.
 Robb, Alexander F.
 Roberts, George
 Robinson, Edward
 Rockefeller, Mrs. David
 Rodgers, William S. S.
 Rodman, Mrs. Hilda C.
 Roessel, Mrs. M.
 Roosevelt, Mrs. George E.
 Ros, Mrs. Salvador
 Rose, Alfred L.
 Rose, Robert
 Roth, Mrs. William P.
 Rous, Mrs. Arthur
 Rowell, Mrs. Frank B.
 Rowland, Benjamin, Jr.
 Royster, Mrs. Thomas S., Jr.
 Ruffolo, Mario A.
 Rumsey, Charles C.
 Rusk, Dean
 Russell, Harry A.
 Rutherford, Mrs. John
 Sacco, Dr. Russell J.
 Sadowsky, Carl R.

*Deceased

Santry, Joseph V.
 Sargent, Miss Kathrine A.
 Satin, Mrs. **Martha**
 Saunders, Mrs. B. H.
 Sawyer, Mrs. Albert E.
 *Scaife, Alan M.
 *Schenker, Dr. A.
 Schiffmann, Leon
 Schiller, Mrs. William B.
 Schleifer, Mrs. Arthur
 Schlesinger, Mrs. Edwin
 Schlosberg, Richard
 Schneider, Franz
 Schneller, George O.
 Schoenburg, Mrs. Peter
 Scholtz, Mrs. Janos
 Schulte, Mrs. David A.
 Schur, Ira A.
 *Schwarz, Miss Emily E.
 Schwarz, Frederick A. O.
 Schwarz, Herbert F.
 Scott, Dr. John J.
 Scott, S. Spencer
 Scott, Mrs. Stuart
 Scribner, Charles T.
 *Scudder, Miss Antoinette Q.
 Sears, Mrs. Henry
 Sears, Henry F., Jr.
 Secor, Master Nicholas T.
 Sedgwick, Mrs. Francis M.
 Selig, Mrs. R. F.
 Sergievsky, Mrs. Boris
 Seymour, Whitney N.
 Shattuck, Mrs. John Ridge
 Sheffield, Frederick
 Sheldon, Peter
 Shelton, Mrs. Henry T.
 Sheridan, Philip
 Shey, Dr. Irving Alfred
 Shookhoff, Howard B.
 Shrewsbury, Miss Ethel M.
 Sinclair, Mrs. Jennie H.
 Singer, Arthur B.
 Slaughter, Mrs. Charles
 Slavic, Mrs. Fred
 Smillie, Ralph
 Smith, Francis M.
 Smith, Miss Gertrude
 Robinson
 Smith, Mrs. Hayden
 Smith, Maxim
 Smith, Winthrop H., Jr.
 Smithers, C. Francis
 Smull, Mrs. J. Barstow

Snyder, Mrs. Frank V.
 Solove, David B.
 Sonfield, Charles
 Spalding, M. Boardman
 Speakman, Miss Russel
 Speert, Mrs. Harold
 Sperber, Miss Myrtle A.
 Spier, Mrs. June Havoc
 Spivack, Mrs. Sydney S.
 Spooner, Ray Newhall
 Sprague, Raymond
 Stanley, Harold
 Starzel, Mrs. F. J.
 Staub, Harry
 Stawitz, Frederick J.
 Stebbins, Mrs. Horace C.
 Stebbins, Theodore E.
 Stecher, Dr. Robert M.
 Steiger, Harold
 Stein, Dr. Kenneth E.
 Stellar, Dr. Stanley
 Sterling, Joseph S.
 Sterling, Mrs. Robert D.
 Stevens, Miss Viola G.
 Stevenson, Harvey
 Stillman, Mrs. Jay
 Stoddard, William
 Stokes, J. G. Phelps
 Stokes, Mrs. J. G. Phelps
 Stotz, Norman I.
 Stouffer, Vernon
 Stout, Mrs. Andrew V.
 Stout, Dr. Arthur Purdy
 Stover, Robert C.
 *Straub, Paul A.
 Straus, Donald B.
 Strauss, Mrs. Philip A.
 Stuart, Mrs. E. G.
 Sturges, Mrs. Walter Knight,
 Jr.
 Sudman, Victor J.
 Sullivan, Mortimer S.
 Sulzberger, Arthur Hays
 Sulzberger, Mrs. Arthur Hays
 Sulzberger, Dr. Marion B.
 Surkamp, Arthur
 Sutherland, Dr. Arthur M.
 Swan, Mrs. Thomas W.
 Swenson, S. R.
 Swift, Mrs. Edward F., Jr.
 Swift, Harold H.
 Switz, Mrs. Paul F.
 Swope, John
 Symington, Charles J.

Szanto, Dr. Emery
 Taggart, Mrs. Rush
 Tannenbaum, Mrs. Jane Belo
 Tate, Mrs. H. Clinch
 Taylor, Mrs. Henry C.
 Taylor, Mrs. Read
 Temple, Dr. H. L.
 Thacher, Mrs. John S.
 Thomas, J. R.
 Thomas, Michael M.
 Thompson, Earle S.
 Thompson, Mrs. Lewis S.
 Thompson, Michael Gordon
 Thorne, Oakleigh L.
 Timolat, James G., Jr.
 Timolat, Louis K.
 Titus, Robert R.
 Titus, Mrs. Robert R.
 Todd, Mrs. Russell W.
 Tomlinson, R. E.
 Tozzer, Mrs. Alfred M.
 Tozzer, Mrs. Isabel Kellers
 Tree, Ronald
 Trimble, Mrs. M. Brown
 Tuck, Edward H.
 Tucker, Mrs. Nion
 Tudor-Hart, Mrs. Percyval
 Tunney, Mrs. Gene
 Turnbull, Arthur
 Turner, Mrs. Huntington M.
 Turner, Lewis
 Urban, Dr. Jerome A.
 Van Allen, Miss Betsy
 Vanderpoel, Mrs. Floyd L.
 Van Dyke, Mrs. Tertius
 Van Norden, Miss Margery L.
 Van Raalte, Arthur
 Van Sinderen, Adrian
 Van Vleck, Howard A.
 Varona, Luis S., Jr.
 Vernon, Weston, Jr.
 Viosca, Harry
 Von Au, Mrs. Otto E.
 von Hennig, Horst
 von Meiss-Teuffen, Mrs. Hans
 von Stade, Mrs. F. Skiddy
 Vuilleumier, Dr. J. A.
 Wachsmuth, Mrs. Ernest E.
 Waddell, Mrs. Chauncey L.
 Waggstaff, George B.
 Wagstaff, Hunt T.
 Walden, Ulisses D. E.
 Waldes, Milo
 Walerstein, Gilbert

**Deceased*

Walker, Joseph	Weber, Mrs. John J.	Willetts, William P.
Walker, Louis E.	Webster, Dr. Jerome P.	Willetts, Mrs. William P.
Wallace, Charles J.	Weems, F. C.	Williams, Dr. Byard
Walton, Rudolph L.	Weiden, Norman	Williams, Charles S.
Warburg, David	*Weil, Frank	Williamson, Clifton P.
*Warburg, Mrs. Felix M.	Weil, Mrs. Frank A.	Wilmerding, Mrs. Lucius
Warburg, Frederick M.	Weisberg, Laurence B.	Wilmerding, Lucius, Jr.
Warburg, Gerald F.	Weld, Mrs. Philip B.	Wilson, Horace H.
Warburg, Paul Felix	Welldon, Samuel A.	Wilson, Lou
Ward, Miss Winifred S.	Wellington, C. Oliver	Wilson, Mrs. Paul E.
Wardwell, Mrs. Edward R.	Wells, Dr. Gibson J.	Windisch, Richard P.
Warfield, Ethelbert	Wentink, Mrs. J. G.	Wise, Mrs. Robert
Warriner, Robert S.	West, Mrs. Davenport	Wisner, William L., Jr.
Waterman, Robert E.	Whipple, Mrs. Taggart	Woodward, Cedric R.
Waters, Mrs. F. S.	White, Harold T., Jr.	Woodward, Mrs. Julian L.
Watkins, John B.	White, Richardson, Jr.	Woolf, Mrs. Louis J.
Watson, Mrs. Jeannette	White, Miss Shiela L.	Worcester, Dean K.
Watson, Mrs. Thomas J.	Whitman, Gerald	Wright, John S.
Wauchope, Admiral Geo. M.	Whitridge, Arnold	Zelenko, Harry
*Way, Miss Ruth	Whitridge, Mrs. Arnold	Zepp, Dr. Clarence P., Jr.
Weaver, Mrs. William B., Jr.	Wicke, Mrs. Carl	Ziesing, Mrs. Hibben
Webb, Mrs. Vanderbilt	*Wile, Edwin	Zucker, Dr. Mordecai

Annual Members

Abbott, Mrs. Theodore J.	Allyn, Stanley C.	Aronow, Joseph Mitchell
Abeloff, Dr. Abram J.	Alsleben, Alfred A.	Aronson, Bernard
Abrahams, Dr. Irving	Alsop, John	Arthur, Mrs. Donald, Jr.
Abrahams, Michael M.	Altman, Clifford B.	Asch, David
Abrams, Mrs. Beverly W.	Altman, Dr. Irving E.	Askin, Seymour R.
Achelis, John Fritz	Altshuler, Mrs. Patricia	Astley-Bell, Mrs. Leonard
Adams, Frederick B.	Ambler, Arthur W.	Atwood, Mrs. Whitney Bourne
Adams, John B.	Ames, Ward	Auchincloss, C. C.
Adams, John C.	Amory, Mrs. George S.	Auchincloss, Mrs. Hugh
Adams, Mrs. Pierpont	Ancowitz, Mrs. Gilbert	Aufricht, Dr. Gustave
Adams, Dr. Warren S.	Anderson, Denton	Austin, William A.
Addison, William H.	Anderson, Douglas W.	*Averbeck, M. J., Jr.
Adler, Siegmund	Anderson, Edward H.	Averett, Mrs. Elliott
Agathon, Oshin	Anderson, Lewis N.	Axler, Master Mitchell B.
Agnew, A. Gifford	Anderson, Mrs. William	Backus, Mrs. Dana C.
Agnew, Cornelius R., Jr.	Andrews, A. M., Jr.	Bacon, Mrs. Carter S.
Ahearn, Mrs. Daniel S.	Andrews, Dr. George C.	Bacon, Mrs. Robert Low
Aitken, Dr. Gerard	Andriesse, Albert	Baer, Sidney
Akston, Mrs. Joseph James	Angell, James W.	*Baer, William B.
Aldrich, Mrs. Alexander	Anschutz, Townsend E.	Bahnsen, Mrs. Henry
Aldrich, Miss Amey Owen	Apogi, Dr. Evelyn	Bahr, Miss Edna H.
Alexander, A. B.	Applebaum, Dr. Edmund	Baird, Mrs. Elizabeth
Alexandre, Miss Anna R.	*Armour, William	Baker, Dr. Alice T.
Allard, Brig. Gen. John S.	*Armstrong, Dr. Edward McP.	Baker, Dr. Edward
Allen, Charles W.	Armus, Jerry	Bakhmeteff, Mrs. Boris A.

*Deceased

- Baldwin, Dr. John M., Jr.
 Ball, Robert E.
 Ball, Dr. Thomas L.
 Ballantine, Arthur A.
 Ballard, Miss Lorinda
 Ballentine, Mrs. Albert W.
 Balsam, Michael
 Bamberger, Henry
 Bandes, Mrs. Herbert
 Bangs, Francis N.
 Bannerman, Miss Ann McD.
 Barash, Mrs. Rosalyn
 Barclay, Mrs. Reginald
 Bard, Mrs. Gily E.
 Barker, Miss Elizabeth
 Barlow, Mrs. S. L. M.
 Barlow, William E.
 Barnard, J. Augustus
 Barnett, Mrs. Edgar
 Barnett, Kenneth M.
 Baron, Dr. Louis
 Baronio, Franco A.
 Barreto, Mrs. Blanche
 Barrow, Mrs. Archibald
 Barton, Mrs. S. G.
 Basner, Austin E.
 Bass, Dr. Murray H.
 Bastedo, Mrs. Philip
 Bastedo, Walter
 Bastian, Dr. Robert
 Battey, William Earle
 Bauer, Mrs. Irving L.
 Beach, C. A.
 Beadel, Henry L.
 *Beadleston, Miss Edith
 Beal, Mrs. Gerald F.
 Beals, John D., Jr.
 Beard, Stanley D.
 Beatty, C. Francis
 Beatty, Jerome, Jr.
 Becker, Edward L.
 Bedichek, Mrs. B. G.
 Beldegreen, Dr. Raymond T.
 Bell, Mrs. A. L. Loomis, Jr.
 Bellamy, Mrs. F. Wilder
 Bender, Mrs. Morris B.
 Benedict, Elliot S.
 Benjamin, Mrs. William M.
 Benkard, Franklin
 Bennett, Lawrence
 Bennett, Walter
 Bent, George Payne, II
 Berch, Barnett
 Berg, Mrs. Hunter
 Bergamini, Dr. Herbert V. W.
 Berger, Miss Irma
 Bergh, Philip
 Bergherr, John D.
 Bergstein, Leonard
 Berman, James K.
 Bernecker, Mrs. Alberta H.
 Bernecker, Miss Deloras
 Bernheimer, Sidney G.
 Bernstein, Jerome W.
 Bernstein, Dr. Morris II.
 Bertheau, Cesar J.
 Best, Mrs. Charles B.
 Bicher, Robert B.
 Bigelow, Timothy
 Bigham, Rev. Thomas J.
 Binder, Edwin A.
 Birch, Mrs. John F.
 Bird, S. Hinman
 Bird, Mrs. S. Hinman
 Birdseye, Miss Mary Platt
 Birkel, Miss Julia
 Birnbaum, Martin
 Birsh, Mrs. A. S.
 Bischoff, Miss E. May
 Black, Miss Ellen E.
 Blackham, Wilfrid
 Blattner, Mrs. Adolph A.
 Bliss, Mrs. Walter P.
 Blitzter, Mrs. Edward H. R.
 Block, Dr. Robert E.
 Blodgett, Mrs. Thomas H.
 Blond, Abraham
 Bloomingdale, Samuel J.
 Blossom, Mrs. Dudley S.
 Blount, Robert E.
 Blum, Sidney
 Blumenthal, Dr. R. R.
 Blumenthal, Mrs. Sidney
 Boardman, Mrs. Bradford
 Boardman, Kenneth
 Boardman, Mrs. Kenneth
 Boardman, Miss Rosina C.
 Bobrov, Miss Laura
 Bocher, Main
 Bochow, Dr. George
 Boegehold, Mrs. E. S.
 Boisevain, Mrs. Adolphe
 Bond, Mrs. Stephen N.
 Bones, Miss Rachel Helen
 *Booth, Willis H.
 Borden, Mrs. John C.
 Borden, Richard
 Bori, Miss Lucrezia
 Bostwick, Dunbar W.
 Bosworth, Mrs. Boardman M.
 Bott, Mrs. George
 Botzow, Mrs. William G. F.
 Bouman, Mrs. Leonard F.
 Bourne, Mrs. Robert C.
 Bowers, Arthur
 Boyce, Arthur C.
 Boyce, Harry D.
 Boyer, Mrs. Philip
 Boykin, Miss M. M.
 Braaten, Arthur P.
 Brackman, Mrs. Arnold C.
 Brady, Joseph
 Brady, Mrs. Joseph
 Braga, George A.
 Brainard, Mrs. Voorhees
 Brand, Mrs. Albert R.
 Brand, Del H.
 Brandwein, Dr. Paul F.
 Brassard, Dr. J. A.
 *Bratter, Edward M.
 Brecher, Leo
 Breed, Dr. Charles N., Jr.
 Brenner, Daniel A.
 Bennis, Frank J.
 Bretherton, Mrs. Albert K.
 Brice, Mrs. Helen E.
 Bridgewater, Mrs. William
 Briggs, Mrs. Berta N.
 Brill, Mrs. Robert
 Brody, Barnie
 Brody, David A.
 Brooks, Ernest, Jr.
 Brooks, George A.
 Brooks, Mrs. John
 Brown, Charles S.
 Brown, James M.
 Brown, Miss Mabel W.
 Brown, Robert A.
 Brown, Vernon H.
 Browne, Miss Frances
 Bruce, Dr. Gordon M.
 Bruce, Harold E.
 Brundin, Y. Pierre
 Brunner, George E., Jr.
 Bubel, John Frederick, Jr.
 Buchheister, Carl W.
 Buck, Ellsworth B.
 Buckley, Jere D.
 Bucklin, Mrs. Harris H., Jr.
 Bucky, Dr. Thomas Lee
 Bugbee, Mrs. Henry G.

*Deceased

Bulkley, David T.
 Bulkley, Mrs. David Todd
 Bull, Mrs. Ludlow
 Bullock, Miss Elsie B.
 Bullowa, Mrs. David M.
 Buonocore, Catello H.
 Burckardt, Miss Magdalena
 Burden, James A.
 Burden, Mrs. W. A. M.
 Burger, Carl
 Burgess, Thornton W.
 Burke, John P.
 Burke, Mrs. Mary G.
 Burlingame, Mrs. Frederic A.
 Burlingham, Mrs. Charles
 Burlingham, Charles C.
 Burnett, Mrs. R. Peyton
 Burns, Kenneth
 Burpee, George W.
 Burton, John H., 2nd
 Busardo, James Francis
 *Bushnell, Mrs. Ericsson F.
 Busk, C. W.
 Bussow, Carl
 Butler, Mrs. Arthur W.
 Butterworth, Mrs. F. S.
 Byrne, Mrs. Robert M.
 Cabot, Mrs. Francis H., Jr.
 Caesar, Henry A., II
 Cafferty, Mrs. Martin
 Cain, Byron B., Jr.
 Caine, Laurence
 Caire, Mrs. Laure C.
 Calitri, Junius B.
 Callahan, Mrs. Carmen V.
 Callahan, Thomas V.
 Cameron, Kirk L.
 Camp, Frederic E.
 Campbell, Dr. Eleanor A.
 Campbell, Mrs. Marta P.
 Cane, Melville H.
 Cann, T. G. P.
 Cannon, Mrs. Joseph M.
 Caplin, Stuart
 Capurso, Dr. George James
 Cardillo, Dr. John
 Carey, Andrew G., Jr.
 Carle, Mrs. R. W.
 Carlisle, Mrs. John
 Carpenter, Fairbank
 Carpenter, William M.
 Carroll, G. Wyman
 *Carroll, Philip
 *Carson, Mrs. J. Henry
 *Deceased
 Casamajor, Miss Martha
 Casanave, Louis
 Cecil, Dr. Russell L.
 Cerwin, Master Kenneth W.
 Chandler, William R.
 Chase, Mrs. G. T.
 Chase, Kenneth S.
 Chauncey, Miss Emily
 Chester, Mrs. Hawley T.
 Chiang, Yee
 Childs, Edward C.
 Chinsky, Miss Celia
 Chisholm, Kenneth
 Choate, Arthur O.
 Choate, Miss Mabel
 Choderker, Master Bobby
 Christensen, Dr. L. R.
 Chubb, James Parsons
 Church, Mrs. Charles T.
 Church, Mrs. Willard
 Chusid, Dr. E. Emmanuel
 Cizek, Dr. Louis J.
 Clark, Miss Deborah E.
 Clark, Mrs. Harold Benjamin
 Clark, Harold T.
 Clark, H. Huber
 Clark, Miss Priscilla
 Clark, W. T.
 Clarkson, Mrs. Christopher
 Claudato, Paul G.
 Clayburgh, Mrs. A. H.
 *Clegborn, Albert E.
 Clement, Miss Leslie
 Clephane, Mrs. Douglas
 Cleveland, Mrs. S. Park
 Cloete, Stuart
 Clowes, Miss M. H.
 Clyde, William P.
 Cobb, Boughton
 Cobern, Harry I.
 Coffey, Miss Katherine
 Cohen, A. Richard
 Cohen, Arthur J.
 Cohen, Edward I.
 Cohen, Emil
 Cohen, Dr. Herbert George
 Colbron, Miss Barbara
 Cole, Charles H.
 Cole, Dr. C. Monford
 Coleman, Dr. Joseph A.
 *Colgate, Henry A.
 Colgate, Mrs. John K.
 Collier, Mrs. R. J.
 Collins, Miss Elizabeth E.
 Collins, Dr. Margaret C.
 Colt, Harris D.
 Colton, Toban H.
 Comfort, Mrs. Lowell R.
 Concool, Abraham
 Conde, Miss Corinne
 Connick, Arthur E.
 Connor, Frank P.
 Coogan, Mrs. Jay
 Cooke, Donald
 Cooke, Thomas F.
 Coolidge, Henry Parsons
 Coonan, George E.
 Cooney, John J.
 Cooper, Fred
 Cooper, J. W.
 Cooper, W. M.
 Corbin, R. Beverley
 Cormier, Francis
 Cortesi, Miss Katharine P.
 Corwin, Saul C.
 Costigan, Philip J.
 Coudert, Ferdinand W.
 Coursen, Blair
 Cousins, Miss Patricia A.
 Covo, Dr. Gabriel A.
 Cowdin, J. Cheever
 Cowin, Kenneth A.
 Cowles, William Sheffield
 Cox, John L.
 Cox, Joseph John
 Crabbe, Edward L.
 Cragin, Donald Wilson
 Cramer, Dr. Joseph B.
 Crawford, Mrs. Charles A.
 Crawley, Mrs. John C.
 Cresson, Mrs. William Penn
 Crimmins, Miss Mary
 Crocker, George A.
 Crockett, Christopher
 Crohn, Mrs. Burrill B.
 Crohn, Richard J.
 Cromwell, Mrs. Lincoln
 Crouse, Master Timothy
 Crowell, Dr. David L.
 Crowley, Dr. Ralph M.
 *Crowninshield, Mrs.
 Francis B.
 Cuddihy, Arthur B.
 Cullman, Edgar M.
 Cullman, Howard S.
 Cullman, Mrs. Joseph F., Jr.

Curtis, Miss H. S.
 Curtiss, Mrs. W. Perry, Jr.
 Cushman, Paul
 Cutler, Dr. A. M.
 Cutler, Dr. Janice A.
 Dailey, Mrs. Clarke G.
 Dallett, Mrs. Frederic A.
 Daltroff, Dr. Wilburta
 Daly, D. Loughran
 Dammann, Milton
 Dana, Miss Mary H.
 Daniels, Miss Julia
 Daniels, Theodore L.
 Danzig, Dr. Samuel D.
 Darlington, Mrs. Herbert S.
 Darrell, Norris
 Dautman, George
 Davenport, Henry J.
 Davey, Miss Florence
 Davidson, Miss Margaret
 Davis, A. M.
 Davis, Leonard L., Jr.
 *Davis, Morgan
 Davis, Robert M.
 Dearden, Miss E. C.
 deBrun, Miss Else S.
 De Carlo, Dr. Charles R.
 De Cesare, John
 de Coppet, Miss Gertrude
 DeCosta, Harry
 Deems, Joseph E.
 Deering, Mrs. William R.
 deGersdorff, Mrs. C. C.
 deGroot, Miss Adelaide M.
 Deitchman, Sam
 de Kay, George C.
 de Kay, Mrs. Sidney
 Delacorte, Albert P.
 *Delafield, Lewis L.
 De Lamar, Miss Alice
 Delaney, John B.
 Delehanty, Thornton
 Dembow, George F.
 de Montmorin St. Herem,
 Comtesse
 Dengler, Gregor D.
 Denny, Miss Rose
 Derby, Mrs. Richard
 De Rham, Mrs. Charles, Jr.
 *Despard, Clement L.
 Devany, Thomas
 Devins, Mrs. Margaret
 Diamond, Sidney A.
 Dienst, H. C., Jr.
 Dietrich, Dr. Herbert
 Dietz, Mrs. Howard
 Dimond, Miss Elizabeth E.
 Dimondstein, Mrs. Herbert
 Dineen, Dr. Peter
 Dinin, Dr. A. Philip
 Di Santagnese, Miss Valerie
 Disney, Walt
 Dix, Mrs. John A.
 Dobkin, Mrs. Rose
 Dodd, John B.
 Dodge, Mrs. C. E.
 Doering, Henry F.
 Dolan, Dr. E. John
 Dominick, Gayer G.
 Dondero, Miss Marietta
 Joan
 Donnelly, Miss Florence E.
 Doolittle, Miss Ethelwyn
 Dorr, John V. N.
 Doscher, Mrs. Charles
 Doubleday, Mrs. George
 Doubleday, Mrs. Nelson
 Dougall, Arthur B.
 Doughty, John C.
 Douglas, Lewis W.
 Drake, Mrs. Orville G.
 Draper, Paul A.
 Dreher, Elmer
 Dresnick, Mrs. Natalie K.
 Drey, Walter
 Drimmer, Harold L.
 Drohan, Mrs. William J.
 Drowne, Mrs. H. Russell, Jr.
 Duane, Mrs. Carolyn P.
 Duane, John P.
 Du Bois, Mrs. Arthur B.
 Dubois, Randall M.
 Dubovsky, Dr. Mortimer
 Duff, George M., Jr.
 *Duncan, Stuart
 Dunham, Mrs. Samuel G.
 Dunning, John S.
 Dunphrey, Robert F.
 Durant, Mrs. Donald
 Duryee, Samuel S.
 Dutch, Miss Elizabeth
 Dwight, Mrs. Maitland
 Dyer, Mrs. Horace
 Dyke, George E.
 Dykman, Mrs. Jackson A.
 Earle, Miss Audrey V. E.
 Easby, Mrs. Dudley T., Jr.
 Eberhard, F. R.
 Eberhart, Mrs. Paul M.
 Eberstadt, F.
 Eckardt, Dr. Robert E.
 Eckert, H. William
 Edelman, Mrs. Albert
 Edgar, James A.
 Edgar, William
 Edmonson, Miss Susan
 Edwards, John G.
 Egan, Dr. George F.
 Ehret, Harry W.
 Ehrmann, Dr. Rudolf R.
 Eidlitz, Mrs. Ernest
 Frederick
 Eisenberg, Richard
 Eisenmenger, Dr. William J.
 Eken, Dr. Elizabeth B.
 Elinson, Dr. Jack
 Elkind, Arthur H.
 Ellenberg, Dr. Max
 Elliman, Douglas L.
 Elliot, Michael
 Elliott, Mrs. O. M.
 Ellsworth, John E.
 Elvidge, Dr. Arthur R.
 Ely, Alfred, III
 Ely, Dr. De Forest
 Embury, Mrs. Jane S.
 English, Richard L.
 English, William H., Jr.
 Engstrom, C. William
 Enrich, Mrs. Jules
 Epstein, Dr. Jeanne
 Epstein, Joseph
 Erger, Dr. B. D.
 Erlanger, Michael
 Erlanger, Milton S.
 Eschen, Larry
 Estes, Thomas W.
 Evans, Mrs. Morgan D., Jr.
 Everett, Dr. A. Reginald
 Everett, Miss Roberta
 Ewart, Lady Talbot
 Factor, Mrs. Elaine
 Fagg, Charles C.
 Faggella, Vincent J., Sr.
 Fajans, Irving J.
 Falconer, Miss Margaret
 Falk, Myron S., Jr.
 Farber, George
 Farber, Dr. I. J.

*Deceased

Farber, Dr. Saul J.
 Farr, Dr. Charles E.
 Farr, H. Bartow
 Farr, John
 Fately, Norman A.
 Fawcett, Dr. Don W.
 Fawcett, Reginald
 Fay, Rev. John G., S.J.
 Fay, Mrs. William Rodman
 Feibush, Mrs. Joseph
 Feinberg, Dr. Isadore
 Feist, Seymour
 Felberbaum, Dr. Alfred S.
 Felderman, Dr. Ephraim J.
 Felsher, Hal-Curtis
 Felton, Mrs. Cornelius C.
 Ferber, Dr. Robert
 Ferrer, Mrs. J. M.
 Feuer, Master Jed
 Fiddler, Robert W.
 Field, Dr. William W.
 Fields, Miss Joanna
 Finch, Mrs. E. C. K.
 Fincke, Mrs. Reginald
 Findley, Paul B.
 Fine, Alexander
 Fine, Dr. Bernard D.
 Finkel, Leonard E.
 Finkentaedt, Dr. John T.
 Fischer, Mrs. Morris R.
 Fischbacher, Mrs. H.
 Fisher, Andrew
 Fisher, Mrs. Morton S.
 Fishman, Irving
 Fitzmaurice, Mrs. Michael
 Fitzpatrick, Paul
 Flagg, Mrs. S. Griswold
 Flatau, Martin
 Fleischer, Herbert E.
 Fleischmann, Mrs. Udo M.
 Fluekiger, Miss Dora
 Whitman
 Foley, George W.
 Fondiller, Mrs. Richard
 Foote, Sterling D.
 Forbes, John Ripley
 Ford, Henry W.
 Ford, Sumner
 Forster, Mrs. Jo Ann
 Forsyth, Miss Adele G.
 Forsyth, Mrs. Harry
 Fortner, Dr. Joseph G.
 Fosdick, Mrs. Paulding

Foster, Dr. William J.
 Foulke, Mrs. Roy A.
 Fowler, Miss Agnes
 Fowler, James A., III
 Fowler, Mrs. Lewis M.
 Fox, Miss Alice Bleecker
 Fox, E. Tunnichliff
 Fox, Harold R.
 Fox, Master Ralph
 Friar, Wayne F.
 Frank, Alexander
 Frank, Charles
 Frank, Mrs. Emma O.
 Frank, Dr. Richard L.
 Franken, Mrs. Richard B.
 Franklin, B. M.
 Franklin, Curtis
 Franklin, Joseph K.
 Franklin, Mrs. Paul
 Franzen, Mrs. Ulrich J.
 Fraser, George C.
 Frederick, Karl T.
 Fredericks, J. W.
 Freed, Dr. Arnold
 Freed, Mrs. Arthur
 Freed, H. W.
 Freedman, Abraham
 Freeman, Miss Gladys M.
 Freeman, Miss Olive
 Freiden, Jesse
 Freydenberg, Irwin G.
 Fricke, Mrs. D. Carl
 Friedlaender, Mrs. Helmut N.
 Friedland, Leonard
 Friedlander, Mrs. Sylvia M.
 Friedman, Dr. Alexander J.
 Friedman, Mrs. Lora
 Frissel, Miss Toni
 Frost, Frederick G., Jr.
 Frost, John W.
 Frothingham, William I.
 Fuchs, Arthur
 Fulton, R. Arthur
 Fulton, Robert A., Jr.
 Funk, Wilfred
 Furst, Dr. Joseph B.
 Futuyma, Douglas Joel
 Gabriel, Mordecai L.
 *Gadebusch, Paul H.
 Gaillard, William D.
 Gair, Mrs. Robert
 Gaisman, Henry J.
 Gale, C. Herbert

Gale, Mrs. Dermot W.
 Galland, Ned K.
 Gallatin, Mrs. Albert
 Gallatin, Goelet
 Galloway, Mrs. Louise
 Galm, John
 Garofolo, Peter
 Gauss, Mrs. D. Christian
 Gavan, Gordon S.
 Gaver, Gordon P.
 Gavin, Mrs. Michael
 Gayley, H. Clifford
 Geddes, Eugene M.
 Geddes, Gerald
 Geer, Dr. Francis G.
 Gehrman, William H.
 Gemeroy, Dr. Douglas G.
 Gendel, Dr. Edward
 Gengler, Mrs. Arthur
 Gerard, Dr. Donald L.
 Gerber, Julius
 *Gerngross, Leo
 Gersen, George H.
 Gibb, Robert P.
 Gibbons, Douglas
 Gibson, Charles D. W.
 Gibson, Mrs. Harvey D.
 Gilder, Mrs. Rodman, Jr.
 Gill, Miss Edna R.
 Gillen, Harold W.
 Gilleran, Carroll
 Gilliard, E. Thomas
 Gimbel, Mrs. Louis S., Jr.
 Githens, Mrs. W. French
 Gladstone, Arthur A.
 Glazier, Mrs. Henry S.
 Gleason, James L., Jr.
 Gleicher, Mrs. Joseph W.
 Glusman, Dr. Murray
 Goddard, Miss Jessamine
 Goddard, Mrs. Morrill
 Godwin, Miss E. L.
 Godwin, Frederick M.
 Goetsch, Mrs. John B.
 Goetz, James C.
 Goldberg, Dr. Abe
 Goldfarb, Dr. Norman
 Goldin, Mervin J.
 Goldman, Melvin
 Goldmark, Dr. Carl, Jr.
 Goldschmidt, Mrs. Carel
 Goldsmith, Robert L.
 Goldstein, Mitchell

*Deceased

Goodbody, Mrs. M. F., Jr.
 *Goodell, Raymond B.
 Goodfriend, Dr. Milton J.
 Goodhue, Mrs. Charles E.
 Goodkind, Henry M.
 Goodman, Mrs. Herbert S.
 Goodman, Mrs. Joseph
 Goodman, Dr. Soll
 Goodyear, A. C.
 Gordon, Mrs. Robert
 Gorzka, Andre Stephen
 Gott, Rodney C.
 Gottesman, Eugene
 Gould, Dr. Jean M.
 Grace, Mrs. David
 Grady, Mrs. H. A., Jr.
 Graeffe, Edward
 Graff, Howard
 Graham, Dr. John C.
 Gram, Mrs. Carl, Jr.
 Grant, David E.
 Grant, L. J.
 Grasnick, Miss Ingeborg
 Green, Herbert, Jr.
 Green, Richard E.
 Greenawalt, Kenneth W.
 Greenbaum, Edward, Jr.
 Greene, Bernard F.
 Gregg, Peter A.
 Genard, Steve
 Gresser, William
 Gretsck, Mrs. William
 *Griffin, William V.
 Grigsby, Miss Susanne
 Grinnell, Lawrence I.
 Grinnell, Dr. Robert S.
 Griscom, Mrs. Clement A.
 Grodenchik, Irving
 Groesbeck, Mrs. Herbert
 Grose, Waldo
 Gross, Bernard
 Gross, Mrs. Martin
 Gross, Max
 Grossman, Mrs. Cyrus S.
 Grosvenor, William
 Grout, Mrs. H. McIntyre, Jr.
 Gruber, Mrs. Maurice
 Gruntal, Benedict H.
 Gudgeon, Master Kim S.
 Gunnison, Mrs. R. M.
 Gurlitz, Miss Elizabeth H. L.
 Gustafson, Robert L.
 Gutermuth, C. R.
 Gutheil, Paul C.

Gutman, DeWitt
 Guttelman, Dr. Adeline S.
 Gutmacher, Dr. Alan F.
 Guy, Dr. Loren P.
 Gwynne, Alfred P.
 Hack, Randall
 Hadley, Mrs. Hamilton
 Hahr, Walter
 Haight, Mrs. Sherman Post
 Haldt, Harry Peale
 Haldt, Mrs. Harry Peale, Sr.
 Halit, Joseph
 Hall, A. Nelson
 Hall, Price B., Jr.
 Hallenborg, Mrs. Charles
 Hallett, Brewster
 Halpern, Dr. Alfred
 Halpryn, Louis Joel
 Halsband, Robert
 Halsey, Miss Elizabeth
 Halsted, Miss Marie L. G.
 Hamberger, John F.
 Hamblen, Harold E.
 Hamburger, Mrs. Philip
 Hamilton, Minard
 Hamilton, Sherwood
 Hammett, Dr. John E.
 Hammond, Mrs. John Henry
 Hammond, Miss Natalie Hays
 Hammond, Paul
 Handelsman, Dr. Jacob R.
 Handwerker, Murray
 Hard, Mrs. De Courcy L.
 Hard, Miss Susan
 Harder, F. Kenneth
 Harder, Frank K., Jr.
 Harding, William Barclay
 Harkness, Norris
 Harris, Mrs. Duncan G.
 Harris, Mrs. John W.
 Harris, Mrs. John W.
 Harris, Roger D.
 Hart, Mrs. A. S.
 Harvey, Dr. E. Newton
 Harvey, Mrs. Harold D.
 Harwick, Harry J.
 Hasbrook, Mrs. Sunset B.
 Haskell, Amory L.
 Hasse, Miss Claryce P.
 Hatch, Waldo M.
 Hausner, Mrs. Elizabeth S.
 Havemeier, Alfred F. J.
 Havemeyer, Henry O.
 Havender, Joseph, Jr.

Hawkins, Dexter C.
 Hay, Clarence L.
 Haynes, Raymond B.
 Hayward, Dr. Emeline Place
 Hazeltine, Dr. Alan
 Healy, Mrs. John H.
 Healy, Dr. Robert
 Hearst, John R.
 Hearst, Randolph A.
 Hechinger, Mrs. Sidney
 Hecker, Mrs. Frances
 Heckman, Charles W.
 Hedman, Mrs. G. W.
 Heinsheimer, Mrs. Norbert
 Heitner, Mrs. William
 Helbing, Miss Alma B.
 Heller, Albert E.
 Heller, Dr. John H.
 Heminway, John H.
 Hemley, Dr. Samuel
 Hendelson, William
 Henderson, Alexander I.
 Henderson, Dr. Alfred R.
 Henderson, Charles F.
 Herbert, Dr. Victor
 Hernstadt, Miss Bertha
 Hernstadt, William L.
 Hersey, Mrs. Alexandrina
 MacG.
 Hess, Mrs. Alfred F.
 Hess, Mortimer H.
 Hessel, Sidney A.
 Hewins, Miss Elizabeth L.
 Heydt, Charles E.
 Hickam, Mrs. Dorothy B.
 Hickox, Charles V.
 Hilfer, Mrs. Harry
 *Hill, E. B.
 Hill, Mrs. Martin
 Hinman, Mrs. Edward
 Hirsch, Thomas
 Hirsch, Mrs. Walter A.
 Hirschbein, Miss Helen
 Hirshon, Mrs. Walter
 Hirt, Miss Elizabeth
 Hitchcock, Mrs. Ethan A.
 Hitchcock, Horace G.
 Hobson, Miss Katherine
 Thayer
 Hochmuth, Raymond
 Hodgson, Edward S.
 Hoff, Dr. Amanda
 Hoffman, Miss Sally
 Hoffman, Mrs. William V.

*Deceased

Hoffmann, Miss Eleanor
 Hoffmann, Mrs. John
 Hoffmann, Dr. Richard H.
 Hofheimer, Joseph
 Holding, Mrs. Archibald M.
 Hollerith, Miss Natalie
 Hollins, Robert L.
 Hollister, Mrs. Frederick K.
 Holmes, Dr. Hilary H.
 Holton, Charles W.
 Homer, Bernard
 Hopper, Miss Nathalie
 Hopson, Dr. George H.
 Horn, Adam J.
 Horn, Stephen I.
 Horowitz, Jerome
 Horowitz, Mrs. Rita
 Hotchkiss, Edwin L.
 Houston, Miss Jessie F.
 Howard, Mrs. Oscar
 Howard, Samuel
 Howell, Mrs. Edward W.
 Howley, Thomas
 Hoyer, Frans
 Hoyt, Mrs. Lydig
 Hubbard, William H.
 Hubbs, Clark
 Huber, Miss Olive
 Hudson, Mrs. Lea
 Huffman, Mrs. Moore P.
 Huguley, Mrs. Arthur W., Jr.
 Hull, Mrs. Cora A.
 Hull, Mrs. Lytle
 Humphreys, Mrs.
 G. H., 2nd
 Hunnewell, Arnold W.
 Hunt, Mrs. Barron
 Hunt, Roy A.
 Huntington, Miss
 Catherine C.
 Hurdman, John C.
 Hurley, James S.
 Hurwitt, Robert
 Hutner, Bernie
 Hutton, Mrs. Hubert E.
 Hyman, Dr. A.
 Ingersoll, Mrs. R. V.
 Ireland, Rufus J., Jr.
 Irving, Michael
 Isaacs, Stanley M.
 Isaacson, Miss Mollie-Jane
 Iselin, Lewis
 Iselin, Mrs. Lewis
 Iselin, Miss Louise M.

Iselin, Peter
 Iselin, Mrs. William O'D.
 Iseman, Harold M.
 Jackson, Mrs. Addie E.
 Jackson, John G.
 Jackson, Harrison Sanford
 Jackson, Miss Lorraine
 Jackson, Theodore R.
 Jackson, William E.
 Jacobs, Stanley R.
 Jacobus, David D.
 Jaffe, Mrs. Howard
 James, Mrs. Henry
 Jameson, Edwin C., Jr.
 Jamin, Eugene
 Jaques, Mrs. George W.
 Jehl, Dr. Joseph R.
 Jenks, Mrs. Robert I.
 Jensen, Miss Margaret I.
 Jeppson, Dr. Janet
 Jessup, Everett C.
 Jezer, Dr. Abraham
 John, John P.
 Johnson, Stephen Andrew
 Johnson, T. T.
 Johnston, Scott
 Jones, Mrs. E. Powis
 Jones, Miss Frances A.
 Jones, Frederick, Sr.
 Jones, Herman LeRoy, Jr.
 Jones, Marvin L.
 Jordan, Thomas V.
 Joseph, David
 Joy, Frederick van B.
 Joyce, William R., Sr.
 Jude, Mrs. Henry
 Judson, Miss Helen
 Jurka, Dr. Charles E.
 Juta, Jan
 Kadane, David K.
 Kahn, Dr. Arthur R.
 Kahn, Theodore
 Kahn, Walter N.
 Kane, Charles B.
 Kaplan, Mrs. Phillip
 Karmin, Dr. Leo R.
 Kaskoun, Mrs. Doris
 Kastor, Mrs. Hugo
 Katz, Seymour
 Katzenstein, Mrs. Thea
 Kaufman, William B.
 Kayser, Miss Ruth
 Keehn, Grant
 Keeshan, Mrs. John W.

Kelley, Nicholas
 Kellogg, Mrs. Francis L.
 Kellogg, Mrs. Frederic R.
 Kelly, Thomas Smith
 Kennedy, James C.
 Kennerley, Mitchell, Jr.
 Kerlin, Gilbert
 Ketcham, E. C.
 Kilham, Miss Teresa
 Kimball, Keith Allyn
 Kimberg, Mrs. Irene
 Kindler, Albert
 Kinne, Russ
 Kinzig, John
 Kirshen, Philip H.
 Kitchen, Herman W.
 Klaussmann, Eric K.
 Klein, Mrs. D. Emil
 Klein, Mrs. Daniel
 Klein, Norman S.
 Kleinfeld, Dr. Louis
 Kleinknecht, Mrs. George W.
 Klingenstein, Joseph
 Klingenstein, Dr. Percy
 Klingmann, Albert
 Knight, Mrs. Augustus S.
 Knock, Daniel B.
 Knowlton, Mrs. Christine S.
 Knox, Mrs. Eva Wehnes
 Knutson, Mrs. R. J. F.
 Koch, Edward R.
 Koenig, Dr. Seymour
 Kool, Richard
 Koon, Done Ot
 Korda, Géza
 Korn, Harold
 Kornblum, Ira
 Kotkin, Dr. Sheldon
 Kotraba, Miss L. V.
 Kraft, Dr. Lisbeth M.
 Kramer, Allan
 Kramer, Frank, Jr.
 Kramer, Joel
 Krasner, Master Jeffrey Marc
 Krause, Mrs. Rosalie V.
 Krech, Mrs. Shepard
 Kritz, Mrs. David
 Kronenberg, David I.
 Krueger, Richard G.
 Kuehn, E. H.
 Kuenzli, Walter A.
 Kynaston, Mrs. Percy L.
 Ladd, R. J.

Lamb, Dr. A. R., Jr.
 Lamb, Mrs. Gilbert B.
 Lambert, Dr. Adrian
 Lane, Dr. Robert A.
 Lange, Mrs. Arthur N.
 Langmann, Dr. Alfred G.
 Lanman, Dr. Ben Marr
 Lanyon, Wesley E.
 Laragh, Dr. John H.
 Larkin, Dr. Vincent
 Larsen, Mrs. Julia
 Lasky, Mrs. Burton
 Lassalle, Mrs. Edmundo
 Laszlo, Dr. Andras E.
 Lattin, C. Parker
 Law, Frederick G.
 Lawrance, Mrs. Charles L.
 Lawrence, Mrs. Arthur B.
 Lawrence, Charles C.
 Lazzarini, Dr. A. A., Jr.
 Learned, Mrs. Walter
 Lee, Horace N.
 Leff, Herbert Wilson
 Lefferts, Mrs. Barent
 Lefferts, Mrs. Gillet
 Leggett, Master Nicky
 Lehman, Jonathan
 Leibowitz, Arthur
 Leidesdorf, S. D.
 Leland, Miss Anne Bronson
 Lembke, Mrs. Arthur
 Lenley, Mrs. Jay E.
 Lenley, Miss Sara
 Leo, Jack G.
 Leonard, Miss Laura H.
 Le Roy, Edward A., Jr.
 Lesser, Steven Dean
 Leventhal, Dr. J. M.
 Levin, Wilbur
 Levine, Mrs. Milton
 Lvinger, Mrs. Bernard W.
 Levinson, Morris L.
 Levy, Abraham D.
 Levy, Mrs. B. J.
 Lewine, Robert W.
 Lewis, Madison H.
 Lewis, Mrs. Robert J.
 Lieberman, Dr. Samuel
 Liebler, Walter D.
 Liebman, Julius
 Liebowitz, Benjamin
 Lilienthal, Howard L.
 Lincoln, Mrs. Frederick W.
 Lind, Dr. Arthur

Lindemann, Roland
 Lindey, Alexander
 Lindquist, Mrs. Wallace A.
 Lione, Dr. James G.
 Lipman, Mrs. Walter L.
 Litchfield, Lawrence, 3rd
 Littlejohn, Mrs. Hugh
 Littwitz, Alvin W.
 Livingston, Miss Angelica
 Localio, Dr. S. Arthur
 Locke, Otto Martin
 *Lockett, Arthur H.
 Lockwood, William A.
 Loewenstein, Dr. Rudolph M.
 Lombard, James M.
 Long, Raymond Kingsley
 Lorch, Arthur E.
 Lord, Walter
 Lord-Wood, Miss June
 Lovejoy, Thomas E., III
 Low, David
 Low, Miss Harriette
 Lowe, Jonathan S.
 Lowell, Mrs. Frederick E.
 Lowing, Mrs. Celia Smith
 Lowman, Lawrence W.
 Lowther, Mrs. Florence deL.
 Lubansky, Dr. William
 Lubkin, Dr. Virginia
 Lucas, William D.
 Ludwig, Jesse J.
 Lueder, C. G.
 Lumb, Dr. Charles L.
 Lundgren, Mrs. Charles
 Lunenfeld, Norman
 Lunt, Storer
 Luwisch, Dr. Joachim
 Lyon, Alfred E.
 Lyon, Miss Ruth
 Lyons, Mrs. G. Jarvis
 MacDonald, Mrs. Henry
 Macdonald, Mrs. Ronald, Jr.
 Mack, Mrs. Walter S.
 MacKay, Dr. Kenneth C.
 Macko, Mrs. Charles M.
 MacLaury, Mrs. Robert M.
 Maeder, Mrs. John S.
 Maffi, Mario
 Mahony, Mrs. Marie A.
 Maisel, Master William
 Mendes
 Maller, Dr. J. William
 Mallinson, Hiram R.
 Mallory, Miss Paige

Maly, George
 Manecke, Dr. Phillipp, Jr.
 Mangiardi, Dr. Joseph L.
 Mann, Alan N.
 Manning, James H.
 Manship, Paul
 Marchisello, Dr. Peter J.
 Markel, Lester
 Marks, Arthur W.
 Marks, Miss Barbara Edna
 Marks, Milton R.
 Marsh, Alonzo K.
 Marshall, Miss Edith G.
 Marshall, Louis
 Marsters, Mrs. Arthur A.
 Marston, Hunter S.
 Martin, Dr. Adeline W.
 Martin, Bradley
 Martin, Miss Elizabeth P.
 Martin, Mrs. Grinnell
 Martin, Mrs. Raymond K.
 Marvin, Mrs. Langdon P.
 Marx, Otto
 Maske, Gunnar
 Mason, L. Randolph
 Massey, Mrs. B. P.
 Mathers, Dr. James A. L.
 Mathers, William H.
 Mander, Jack G.
 Maurice, Mrs. Jane H.
 Maxwell, James K.
 Mayer, Harold C.
 Mayer, Michael F.
 Mayer, Mrs. William C.
 Maynard, Mrs. Eric M.
 Maynard, Mrs. Walter
 Mazel, B. L.
 Mazer, Dr. Milton
 McAlpin, Mrs. Allan H., Jr.
 McAlpin, Miss Dorothy P.
 McAneny, Mrs. George
 McCabe, Frank E.
 McCance, Mrs. Thomas
 McCandless, Mrs. William
 McClure, Dr. H. Elliott
 McCormick, Mrs. Roberta
 McCullough, John J., Jr.
 McCurdy, Mrs. J.
 Arrison, 2nd
 McDonnell, Mrs. Hubert, Jr.
 McFadden, Louis E.
 McGrath, F. Sims
 McGrath, Dr. James B.
 McGuckin, B. F.

*Deceased

McKee, Dr. Margaret Harper
 McKelvy, Mrs. Robert
 McKenzie, Mrs. W. M.
 McKittrick, Thomas H.
 McLaughlin, Dr. John J. A.
 McVeigh, Charles S.
 McVickar, H. Kane
 Mead, Giles W., Jr.
 Medina, Harold R.
 Meilman, Dr. Edward
 Mellon, Charles Henry
 Meltzer, Henry
 Menary, Robert V.
 Mendelson, Herbert
 Merck, Albert W.
 Merrill, Mrs. Pauline G. W.
 Messer, Dr. Henry D.
 Messmann, John J.
 Messmann, Mrs. John J.
 Metcalf, Mrs. Manton B., III
 Metzler, Henry W.
 Meyer, Adam
 Meyer, Eugene
 Meyer, George L.
 Meyer, J. Edward
 Meyers, Fred
 Mezzabarba, William
 Michaels, Dr. I. T.
 Michaelson, Master Richard
 H.
 Michalis, Clarence G.
 Midinian, Mrs. S. H.
 Milbank, Robert W.
 Milch, Ernest M.
 Miles, Sanford
 Miller, Mrs. Algernon
 Miller, Mrs. C. Blackburn
 Miller, Mrs. Joseph F. G.
 Miller, Lawrence McK.
 Miller, Nathan
 Miller, Mrs. Ralph R., Jr.
 Millhiser, Mrs. Clarence
 Mills, R. C.
 Milner, Richard
 Miner, Mrs. Eunice Thomas
 Minervini, Alfred P.
 Mink, Dr. Solomon J.
 Minkoff, Eli C.
 Mintzer, Joseph
 Miranda, Antonio O. Gomez
 Misler, Samuel
 Mitchell, Mrs. Ashmore L. L.
 Mitchell, Miss Betty
 Mitchell, George A.
 Mitchell, Mrs. J. Murray
 Mitchell, John D.
 Mitchell, Mrs. S. Roger
 Mizelle, Mrs. Jesse C., Jr.
 Mochi, Ugo
 Mol, A. A.
 Molleson, George A.
 Molnar, Nicholas M.
 Montague, Dr. Joseph F.
 Moody, Harry A., Jr.
 Moore, Mrs. Edward S., Jr.
 Moore, John I.
 Moore, Milton A., Jr.
 Moore, Mrs. S. W.
 Moran, Eugene F.
 Morden, Mrs. W. J.
 Morgan, Alexander P.
 Morgan, Junius S.
 Morgan, Robert W.
 Morrison, Mrs. Charles King
 Morse, Edward
 Moses, Dr. Leon
 Mosle, Mrs. A. Henry
 Moulton, Francis S.
 Moulton, Henry H.
 Mountain, Worrall F., Jr.
 Mullaney, Eugene L.
 Muller, Miss Elizabeth
 Mulwitz, Mrs. Saul
 Muma, John R.
 Mumford, George S., Jr.
 Mumford, Dr. R. S.
 Munn, Ector O.
 Munro, Alan
 Munson, Lt. Charles C.
 Murphey, Dr. James S.
 Murphy, Mrs. Joanna J.
 Murphy, Mrs. John E. B.
 Murray, Mrs. Edward E.
 Murray, Matthew J.
 Myerly, Mrs. Russell
 Myrick, Mrs. Julian S.
 Naidamast, Daniel
 Namm, Mrs. Benjamin H.
 Naumberg, Mrs. George W.,
 Jr.
 Nayfack, Bertram S.
 Nazar, Francisco
 Nelkin, Miss Noel L.
 Nelson, Miss Anna N.
 Nelson, Henry C.
 Nelson, Dr. Theodora
 Nesmith, Col. James, 2nd
 Nestler, Mrs. Frederick B.
 Newburger, Alfred H.
 Newell, Mrs. Edward T.
 Newhall, Donald V.
 Newton, Howard M.
 Newton, William L., Jr.
 Nickelsberg, Miss Elaine M.
 Nickerson, Major Hoffman
 Niederman, Carl
 Nolan, William J., Jr.
 Nordhausen, Robert C.
 Nordlicht, Dr. Stephen
 Norman, Andrew E.
 Norman, Mrs. Dorothy S.
 North, Mrs. Richard A.
 Northrup, Dr. Jane
 Noyes, Mrs. Dorothy Grinnell
 Nuhn, Mrs. Clifford J.
 Oak, Miss Dorothy
 Oakley, Mrs. H. Wayne
 Oakley, Mrs. R. Lawrence
 Oberrender, Dr. Girard F.
 Oberwetter, Manro T.
 O'Brien, Charles B.
 O'Brien, Morgan J., Jr.
 O'Connell, Dr. C. Paul
 O'Connor, Mrs. Ethel A.
 O'Connor, Theodore G.
 Odeven, Frank
 Oenslager, Donald M.
 Oestricher, Sylvan
 Offerman, John
 Ogden, Mrs. Leslie
 Olds, Mrs. Robert E.
 Olin, Miss Viola
 O'Neill, George D., Jr.
 O'Neill, Thomas F.
 Oppenheimer, Daniel J.
 Orenstein, Larry
 Orentreich, Dr. Norman
 Oresman, A. Louis
 O'Rourke, Innis, Jr.
 Ortega, Juan
 Ortner, Louis M.
 Orvis, Mrs. Hardin
 Osborne, Carl N.
 Osborne, John A.
 Osborne, Lithgow
 Osborne, Dr. Melville W.
 Oshima, Robert Rinzo
 Otheman, Roswell C.
 Ottenberg, James S.
 Oustucky, Otto
 Pack, Mrs. Howard M.
 Page, Miss Ione

Page, Nelson L.
 Pagenstecher, Miss Bertha
 Paige, Mrs. Douglas
 Paine, Richard C.
 Palazzo, Robert
 Papazian, Dr. Haig P.
 Papez, Mrs. Constance G.
 Park, A. Brock
 Park, Mrs. H. Halsted
 Parker, Rev. Everett C.
 Parker, George P., Jr.
 Parkinson, Mrs. John, Jr.
 Parmelee, Miss Alice
 Parmelee, Miss Elizabeth
 Parr, F. Van S., Jr.
 Parsons, Dr. Herbert
 Parsons, Mrs. J. Graham
 Parsons, William
 Parsons, Dr. William Barclay
 Paskin, Mrs. Selig
 Pasternak, Mrs. H. D.
 Patelski, Mrs. Ray
 Paton, Dr. R. Townley
 Patterson, Dr. Russel H.
 Paul, Charles
 Pearce, Dr. John M.
 Peck, Stephen Rogers
 Pedersen, Mrs. Ernest G.
 Pelz, Edward J.
 Pennoyer, Mrs. Paul G., Jr.
 Perotti, Mrs. Meda A.
 Perron, Joseph
 Perry, Miss Elaine
 Perry, William T.
 Peters, Dr. Frank H.
 Peters, Miss Isabel M.
 Peterson, Roger T.
 Peyser, Frederick M.
 Pfeiffer, Timothy N.
 Phelps, William H., Jr.
 Phillips, Burt T.
 Phillips, Dr. Walter
 Pickman, Dudley L., Jr.
 Pierce, Allen
 Pierce, Miss Elizabeth Gay
 Pierce, Mrs. Henry B.
 Pierpont, Mrs. John H.
 Piltz, George V.
 Pinkerton, Robert A.
 Pintauro, Dr. F.
 Pioselli, Mrs. Alice B.
 Pisani, Master George R.
 Place, Mrs. Hermann G.
 Platt, Mrs. Frank H.
 Platt, Livingston
 Polay, N.
 Pologe, Mrs. Irving S.
 Pomeroy, Daniel E.
 Pons, Lily
 Pool, Dr. John L.
 Porter, Mrs. Cheever
 Porter, Mrs. N. V.
 Post, Miss Evelyn A.
 Potter, Bronson M.
 Potter, Henry C.
 Potter, L. De Grove
 Potter, Miss Mary G.
 Potts, William R.
 Pough, Richard H.
 Power, Brother R. B.
 Powers, Francis C.
 Powers, Mrs. Helen L.
 Powers, Joshua B.
 Pratt, Mrs. Frederic R.
 Pratt, Mrs. John T.
 Pratt, Dr. T. Dennie
 Prausnitz, Dr. Hans F.
 Prentis, Edmund A.
 Prentiss, Marshall
 Prentiss, Mrs. Marshall
 Price, Gottlieb
 Price, Miss Leonora D.
 Price, Miss Mary Lyle
 Price, Samuel
 Prigoff, Mrs. James
 Prince, Richard
 Proskauer, Richman
 Pruzan, Mrs. Max
 Puzzo, Mrs. Martha
 Quaille, Mrs. Emerson B.
 Quattlander, Edward R.
 Rabenau, Herman
 Ragaini, Dr. Vincent E.
 Rainbeau, Arthur
 Raisler, Robert K.
 Rand, Miss Lucinda H.
 Randall, Mrs. D. J.
 *Ranger, Stanley
 Raphael, Burton
 Ratner, Dr. Frank
 Raymond, Miss Catharine
 Rayward, John L.
 Read, Duncan H.
 Reboul, Mrs. J. B.
 Redecker, William M.
 Redmond, Miss Joan
 Redmond, Roland L.
 Reed, Carl S.
 Reed, Mrs. Chester T.
 Reichert, Robert J.
 Reilly, Dr. Edward T.
 Reilly, John A.
 Reisch, Dr. Milton
 Reisweber, Mrs. G. B.
 Renshaw, Mrs. Paul
 Resnick, Mrs. Samuel
 Resor, Stanley
 Resor, Mrs. Stanley R.
 Reynal, Eugene
 Reynolds, Master Bobby
 Reynolds, D. S.
 Rhinelander, Philip, 2nd
 Rice, Mrs. Joan
 Richard, L. A.
 Richards, Mrs. Edward L.
 Richards, Mrs. Enders
 Richards, Miss Ruth
 Richman, Miss Ann Regina
 Richardson, Arthur B.
 Richter, Joseph
 Richter, Dr. Peter
 Rieser, Dr. Julian
 Rigney, Miss Janet
 Rigney, Miss Rosemary
 Riley, Dr. Henry Alsop
 Rindlaub, Mrs. W. W.
 Ripley, Paul M.
 Ritterrodt, Fred
 Rives, F. Bayard
 Robbins, Dr. Robert M.
 Roberts, Fred E.
 Robinault, Miss Wendy
 Robinson, Miss Pauline L.
 Robinson, William M., Jr.
 Rochow, Donald S.
 Rockwood, William O.
 Rodd, Thomas, 3rd
 Roehl, Mrs. Winslow J.
 Roelofs, Richard, Jr.
 Roelofs, Mrs. Richard
 Rogers, Mrs. Edward A.
 *Rogers, Mrs. Francis
 Rogers, Hubert E.
 Rogers, Russell C.
 Rogerson, Mrs. Stella M.
 Rohmer, Dr. Edward F.
 Roos, John H.
 Roosevelt, George E.
 Ropes, Chapman
 Rorimer, James J.
 Rosato, Rocco
 Rose, Miss Mary

*Deceased

Rosenbaum, Stephen
 °Rosenberg, Charles
 Rosenberg, Edwin A.
 Rosenberg, Mrs. Edwin
 Rosenberg, Master John
 Rosenberg, Dr. Morris
 Rosenberry, Mrs. Samuel L.
 Rosenblatt, Dr. Philip
 Rosenblum, Dr. Louis A.
 Rosenfeld, Saul M.
 Rosenthal, Paul
 Rosenstiel, Fred L.
 Rosiello, Rudolph
 Ross, Edmund T.
 Ross, Kip
 Rossback, Max J. H.
 Roth, Mrs. Andrew Winton
 Roth, Mrs. Jesse, Jr.
 Roth, Mrs. Philip
 Rothkopf, Dr. Ernest Z.
 Rothschild, Mrs. Walter N.
 Rougon, Mrs. Louis J.
 Rounsevel, Mrs. Ashton
 Rous, Bernard
 Rouse, Harold A.
 Ruedin, Pierre
 Ruhe, Louis
 Ruhm, Mrs. Herman D., Jr.
 Rumsey, Dr. William L.
 Russell, Miss April
 Russell, Dr. Henry
 Russell, Miss Joan E.
 Russell, John David
 Russo, Frank J.
 Ruth, Rev. Mother C. H. S.
 Rutherford, Miss Alice
 Ryan, Mrs. John Barry
 Ryder, John H.
 Sachs, Dr. Bernard A.
 Sachs, Teviah
 Sackett, Charles B.
 Sada, Diego G.
 Saenger, Mrs. R. Alfred
 Sagan, Miss Miriam Anna
 St. John, T. Raymond
 Salomon, Morton F.
 Sammis, Donald Stuart
 Samuel, Ralph E.
 Sandor, Paul
 Sanger, Mrs. Elliott M.
 Sarewitz, Dr. Albert B.
 Sargent, Master Roger E.
 Satozky, Dr. Jacob
 Satterlee, Hugh

Sauerbrey, William A.
 Sauter, Fred
 Savage, Mrs. T. F.
 Sayers, Mrs. Henry S.
 Scales, Mrs. Victor H.
 Scanlon, John, Jr.
 Schaefer, Rudolph J.
 Scharff, B.
 Schaub, Simon
 Schein, Mrs. Max
 Scherrer, Miss Clara A.
 Schetty, Frank R.
 Schiemann, Herbert F.
 Schilio, Mrs. Lewis
 Schlesinger, Ferdinand G.
 Schley, Mrs. Kenneth B.
 Schloss, Mrs. Hede
 Schmidhauser, Harold B.
 Schmones, B.
 Schneider, Earl
 Schneider, Dr. Harry
 Schneiderman, Dr. Julius
 Schnell, Mrs. Erika O.
 Scholle, Hardinge
 Scholnick, Abe.
 Schonbrunn, S. A.
 Schonholz, Dr. David H.
 Schortman, Dr. Edward F.
 Schrenkeisen, Mrs. Ralph T.
 Schroder, George H.
 Schubert, Mrs. Quentin
 Melling
 Schultz, Harry O.
 Schultz, Dr. Louis A.
 Schulz, Miss Katie
 Schwahn, Werner
 Schwartz, Mrs. Albert
 Schwartz, Mrs. Edward R.
 Schwartz, George I.
 Schwartz, Milton
 Schwartz, Dr. Oscar
 Scofield, Robert E.
 Scofield, Robert R.
 Scott, Henry C.
 Seagle, Miss Louis Peekham
 Searl, Fred Herb
 Seelig, Mrs. Alexander
 Segal, Jules
 Seibert, Robert F.
 Seitz, Mrs. Richard
 Selby, John C.
 Seretan, Dr. Edward L.
 Serling, Dr. Maurice E.
 Serrell, Mrs. Howard P.

Shanahan, T. J.
 Shannon, Mrs. Kenyon
 Shapiro, Dr. Daniel
 Shapiro, Marc R.
 Shapiro, Paul
 Shapiro, Dr. Raymond
 Sharp, Mrs. L. I.
 Shaw, Dr. Edward J.
 Shelton, Allen W.
 Shepard, Dr. Frank P., Jr.
 Shepherd, George E.
 Sheps, Dr. Jack
 Sherer, Dunham B.
 Sherman, Mrs. Betty
 Sherman, Mrs. Louise
 Sheward, Virginia
 Shiel, Mrs. Margaret O'N.
 Shiffman, Mrs. Harry
 Shippee, Lester E.
 Shulman, Murray H.
 Siebern, Henry W.
 Siegel, Charles D.
 Siegel, Dr. Henry
 Silberman, Morton S.
 Silow, Herbert
 Silson, Dr. John E.
 Silverman, Dr. William A.
 Simmon, Rudolph
 Simmonds, Mrs. Ruth
 Simon, Robert E., Jr.
 Singer, Herbert M.
 Sinnigen, Mrs. Walter C.
 Sirna, Anthony A.
 Sleik, Henry
 Sloan, Nathan
 Sloane, John
 Slotter, Mrs. Charles F.
 Smadbeck, Dr. Warren
 Smith, Mrs. Franklin G.
 Smith, Mrs. Geddes
 Smith, Mrs. Harold DeWitt
 °Smith, Mrs. H. J.
 Smith, Howard Caswell
 Smith, Lee Thompson
 Smolka, Mrs. Norman
 Smolka, Mrs. Sidney
 Smyth, Miss Barbara Sally
 Smyth, Herbert C.
 Snow, Richard B.
 Snowden, Miss Sandra
 Snyder, Robert H., Jr.
 Sock, Nate
 Socolof, Ross B.
 Soderberg, Gustave J., Jr.

*Deceased

Solkow, Saul
 Soria, Mrs. Dario
 Spear, Arthur P., Jr.
 Speiden, Mrs. Hammond
 Spencer, Miss Margaret T.
 Spilman, Mrs. Raymond
 Spurr, Joseph James, 2nd
 Squires, George R.
 Squires, Mrs. Lawrence
 Stampfer, Daniel
 Stanley, Alfred T.
 Stanley, Samuel F.
 Stanwick, Charles A.
 Starkey, Earle J.
 Starr, Mrs. Louis
 Statham, Noel
 Steever, Edgar Z., 4th
 Steffanson, Hakan B.
 Stein, Mrs. Ernest
 Steinhardt, Samuel C.
 Steinhauer, Mrs. Sidney
 Stenger, Dr. Albert H.
 Stern, Charles M., Jr.
 Stern, Edward N.
 Stern, John Philip
 Stern, William J.
 Stetten, Mrs. DeWitt
 Steuer, Walter
 Stevens, Mrs. Gloria
 Stevens, John P., Jr.
 Stevens, Leighton H.
 Stewart, Dr. Charles F.
 Stewart, Jan Piet
 Stewart, Percy M.
 Stewart, William A. W.
 Stiger, Miss Frances A.
 Stillman, C. D.
 Stokowski, Master Christi
 Stokowski, Master Stani
 Stoll, Charles H.
 Stone, David B.
 Stone, Robert G., Jr.
 Storck, John
 Storer, John H.
 Stout, Gardner D.
 Stowe, Mrs. Lyman Beecher
 Straatsma, Mrs. Clarence R.
 Straka, Jerome A.
 Straus, Mrs. Nathan
 Strawbridge, Robert E., Jr.
 Strawbridge, Mrs. R. E.
 Strax, Dr. Philip
 Streck, Dr. Charles B.
 Streeter, Daniel W.

Streeter, Edward
 Stringfellow, Miss Ethel Grey
 Stritter, Miss E. Eleanor
 Strong, Benjamin
 Strong, Mrs. Charles H.
 Stroock, Daniel W.
 Strubing, Mrs. William
 Stuart, Mrs. David
 Stuart, Lyall L.
 Stumpp, Mrs. Edwin A.
 Sturman, Mrs. Paula
 Sully, Wilberforce, Jr.
 Sulzberger, Dr. Carl F.
 Summers, George W.
 Sumner, Miss Estelle
 Sunderland, Edwin S. S.
 Supancich, Joseph F.
 Sussman, Dr. Robert A.
 Swan, Joseph R.
 Swanson, Dr. Fritz J.
 Swenson, Mrs. R. B.
 Sydney, Manuel G.
 Taber, Rev. Grief
 Taber, Mrs. John S.
 Taddiken, Miss Melita
 Tansill, J. Duncan
 Tarshis, M. A.
 Taylor, Dr. Gilbert H.
 Taylor, Dr. Gurney
 Taylor, Mrs. Isabelle S.
 Taylor, John W.
 Taylor, Mrs. William R. K.
 Taylor, Willis H., Jr.
 Teitelbaum, Carl
 Ternstrom, Thorwald
 Tesauo, Thomas H.
 Thacher, Thomas
 Thane, George
 Thees, John D.
 Thiem, Mrs. J. R.
 Thoma, Mrs. Richard W.
 Thomas, Mrs. George P.
 Thomas, H. Gregory
 *Thomas, Harvey M.
 Thomas, Mrs. Howard L.
 Thomas, Mrs. Landon
 Thomas, Norman M.
 Thompson, Calvin A.
 Thompson, D. G. Brinton
 Thompson, Miss Gale
 Thompson, Mrs. Milton
 Thomson, William B.
 Thorne, Mrs. John Norrish
 Thursby, Sherman

Ticknor, Mrs. W. D.
 Tieman, Louis L.
 Tinker, Mrs. Edward R.
 Tipper, Frederic W.
 Titley, Dr. Mildred S.
 Tobachnik, Mrs. Rita
 Tofano, Dr. Vincent E.
 Tomlinson, Albert H.
 Tovell, Master Harold M.
 Towbis, Mrs. Shirley
 Townsend, Mrs. Frank P.
 Townsend, Mrs.
 Franklin, Sr.
 Traphagen, Hugh M.
 Traphagen, Mrs. J. C.
 Trask, Benjamin H.
 Trask, Mrs. Frederick K.
 Trattler, Charles S.
 Trevor, Mrs. John B.
 Trumbull, Walter
 Tudda, Lawrence
 Tully, William J.
 Turner, John B.
 Turner, John R.
 Tweed, Harrison
 Uhrhane, Mrs. Clarence
 Ulmann, M.
 Untermyer, Mrs. Elise S.
 Upjohn, Everard M.
 Valentine, Miss
 Marguerite E.
 Valentine, Mrs. S. Binford
 Valk, Mrs. Harold
 Van Alstyne, David, Jr.
 Van Alstyne, Mrs. Grace A.
 Vance, Mrs. Cyrus R.
 Vandivert, William W.
 Van Dusen, William H.
 Van Gorder, George
 Van Valey, Dr. Edwin C.
 Vash, Dr. George
 Vasile, Dr. John J.
 Veit, Miss B.
 Veit, Mrs. Robert T.
 Verney, Mrs. Kathrin Grant
 Villa, A. P.
 Vishner, Mrs. J.
 Vogeley, Mrs. W. Roebeling
 Voit, Mrs. Helen L-S.
 Volk, Kurt H.
 Waddell, K. C.
 Wadsworth, Dyer
 Wagg, Mrs. Kenneth
 Walker, Miss Elizabeth

*Deceased

Walker, Jack
 Walker, J. Philip
 Walker, Mrs. Samuel P.
 Walker, Samuel Sloan
 Wall, Mrs. E.
 Wallace, Mrs. Kenneth V. C.
 Wallin, Miss Grace E.
 Wallin, Miss Mary
 Walsh, Miss Florence E.
 Walsh, Thomas J.
 Walter, Miss M. Wendy
 Walthier, Francis
 Walton, Harold L.
 Wanek, Mrs. Anna N.
 Wappler, Reinhold D.
 Ward, Mrs. Kenneth
 Wardwell, Miss Alice W.
 Waring, Lawrence
 Warner, Ira F.
 Warnshuis, Mrs. A.
 Livingston
 Wasey, Miss Jane
 Waterbury, Miss Florance
 Waterman, Mrs. Frederick
 W., 3rd
 Waterman, Philip M.
 Watkins, Joseph
 Watson, Bruce
 Watts, Edward E., Jr.
 Wayne, Harold L.
 Webb, Mrs. Byron
 Weber, Dr. Bernard
 Weber, Julius
 Weber, Karl B.
 Weekes, Hobart G.
 Weems, Mrs. F. C.
 Wehnes, Miss Elizabeth E.
 Weigert, Hugo
 Weil, Frank A.
 Weil, Walter L.
 Weilbacher, Mrs. Estelle
 Weiler, Mrs. Merrill G.
 Weinberg, Charles L.
 Weinberg, Mrs. Charles
 Weinberg, Dr. I.
 Weinberg, Miss Ruth F.
 Weiner, Dr. Melvyn L.
 Weinman, Major A. N.

 Weinstock, Mrs. Gerard
 Weintraub, I.
 Weisenseel, Dr. Robert J.
 Weisman, Dr. Abner I.
 Weismann, Harold A.
 Welch, Francis C.
 Wendling, Mrs. Josephine
 Werner, Dr. Jesse
 Wertz, Miss Lillian
 West, John P., Jr.
 West, Miss Nancy R.
 *Wheelwright, Mrs. Mary C.
 White, Mrs. Alexander M., Jr.
 White, Harold L.
 Whitehouse, Sheldon
 Whitman, William, Jr.
 Whitney, Edward A., Jr.
 Whitney, Mrs. George
 Whittaker, Mrs. Wallace
 Whittlesey, Melzar M.
 Wiener, Geoffrey R.
 Wiese, Mrs. Caroline .
 V. der W.
 Wiesel, Dr. Benjamin
 Wigle, Mrs. George C.
 Wigle, Miss Leopoldine
 Wilbur, Miss Hazel L.
 Wilde, Sydney W.
 Wilder, Neil MacDonald
 Wilhelm, Dr. Hazel S.
 Wilkinson, Dr. Joseph B.
 Wilkinson, Mrs. Lawrence
 Willett, Mrs. Porter L.
 Willey, Prof. Charles H.
 Williams, Miss Augusta
 Williams, Douglas
 Williams, Mrs. Douglas
 Williams, Eliot L.
 Williams, M. Woodbridge
 Williams, Ross F.
 Williams, Timothy C.
 Williams, Dr. Walter J.
 Williams, Wheeler
 Williamson, Edward
 Wilner, Ellis H.
 Wilson, Mrs. Ellery Lewis
 Wilson, Miss Joyce R.

 Wilson, R. Thornton
 Wingard, Mrs. Dorothy
 Winkhaus, Mrs. John T.
 Winslow, Mrs. T. Scudder
 Witte, Mrs. Henry D.
 Wittlinger, Miss Bertha
 Wocel, Frank E., Jr.
 Wocel, Mrs. Janet M.
 Wolbarst, Mrs. B. P. E.
 Wolf, Dr. Julius
 Wolf, Stanley
 Wolfe, Arthur
 Wolff, Mrs. J. D.
 Wood, Dr. Harrison F.
 Wood, Mrs. Willis D.
 Woodruff, Miss Helen M.
 Woods, Miss Geraldine
 Woodward, Mrs. William
 Woolley, John E.
 *Worcester, Mrs. Wilfred J.
 Wormser, Felix E.
 Wormser, Mrs. Max E.
 Wortis, Dr. S. Bernard
 Wright, Guier Scott, Jr.
 Wright, Harrison
 Wulfig, F. W.
 Wyeth, Marion Sims
 Wyman, Mrs. L. A.
 Yancey, Rev. P. H., S. J.
 Yopez, F. Fernandez
 Zabin, Dr. A.
 Zagat, Col. Waldo W.
 Zahalsky, Dr. Arthur
 Zahler, Mrs. Zella
 Zahn, Philip
 Zappler, Georg
 Zausner, Hy
 Zeehandelaar, F. J.
 Zepp, Dr. C. P.
 *Ziegler, William, Jr.
 Ziman, Mrs. Edmund
 Ziminski, Stanley W.
 Zinsser, Miss Katherine J.
 Zinsser, William H.
 Zola, Miss Bianca
 Zuccaro, Stephen A., Jr.
 Zurmuhlen, Frederick H.

SUMMARY OF MEMBERSHIP

December 31, 1958

Benefactors	11
Founders in Perpetuity.....	10
Founders	15
Associate Founders	6
Patrons	36
Life Members	375
Supporting Members	51
Contributing Members	1,039
Annual Members	1,938
Honorary Members	5
Fellows	79
Research Associates	3
Corresponding Members	6
<i>Total</i>	<u>3,574</u>

BY-LAWS OF THE NEW YORK ZOOLOGICAL SOCIETY

ARTICLE I • MEMBERS

SECTION 1. The present members and such others as hereafter shall become members in accordance with these by-laws shall be the members of this Society.

SEC. 2. Annual, contributing and supporting members shall be elected by the Board or Executive Committee and, upon election, shall qualify for such membership by payment of dues for the first year commencing on the date of their election.

SEC. 3. Annual dues of annual members shall be \$15, of contributing members \$25, and of supporting members \$100. Any person who shall fail to qualify within three months after his election shall be deemed to have declined his election.

SEC. 4. Any member who shall fail to pay his annual dues within three months after notice that they have become due and demand therefor, shall cease to be a member of the Society. He may, however, be reinstated by the Board or Executive Committee for good cause shown.

SEC. 5. Any person who shall have donated to the Society, in the aggregate, cash or the equivalent in value of any of the following amounts shall be eligible for election, by the Board or Executive Committee, to the class of membership appearing opposite such amount:

\$1,000.00	Patron	\$ 5,000.00	Founder
\$2,500.00	Associate Founder	\$10,000.00	Founder in Perpetuity
	\$25,000.00	Benefactor	

Any person who shall have donated to the Society \$500 in one sum shall be eligible for election to Life Membership. An annual member, contributing member or supporting member who has paid dues for consecutive years amounting in the aggregate to \$200 or more, may thereafter, at any time, upon payment of \$300 or more in one sum, be elected a Life Member. Upon the death of a trustee, his widow shall be eligible for election, by the Board or Executive Committee, to Life Membership.

SEC. 6. The Board or Executive Committee may elect to membership in the following classes persons who, in their judgment, have achieved the qualifications hereinafter specified:

Fellows:—Persons of marked scientific achievement.

Honorary Members:—Persons who have rendered distinguished services in the science of zoology or natural history.

Corresponding Members:—Persons who have rendered marked services to the Society through correspondence.

SEC. 7. All but annual, contributing and supporting members shall be exempt from payment of annual dues.

SEC. 8. Benefactors and Founders in Perpetuity shall have the power to designate their respective successors, who shall thereupon be entitled to all the rights and privileges of their predecessors, including the right in turn to designate their successors. Such designation shall be in writing indorsed or attached to the certificate of membership or by last will and testament.

ARTICLE II • PRIVILEGES OF MEMBERS

SECTION 1. Each annual, contributing and supporting member shall be entitled to a member's ticket, ten tickets of admission to the Zoological Park and Aquarium

on pay days, a copy of the annual report, a copy of the official periodical publication of the Society, and shall be entitled also to the privileges of the Administration Building at the Zoological Park.

SEC. 2. Life Members shall be entitled to all the privileges of annual members and also to ten additional tickets of admission to the Zoological Park and Aquarium on pay days.

SEC. 3. Benefactors, Founders in Perpetuity, Founders, Associate Founders and Patrons shall be entitled to all the privileges of Life Members and also to receive the Society's scientific publication "Zoologica."

SEC. 4. A member's ticket, issued annually, shall admit the member and his immediate family to the Zoological Park and Aquarium on pay days and to lectures and special exhibitions. It may be used by the member's immediate family.

SEC. 5. Each member, other than a member elected pursuant to Article I, Section 6, shall be entitled to one vote at each meeting of the Society.

SEC. 6. Any member who shall fail to comply with the provisions of these by-laws may be suspended from the privileges of membership or dropped from the rolls of the Society, by a majority vote of those present at a duly constituted meeting of the Board or Executive Committee.

ARTICLE III • MEETINGS OF THE SOCIETY

SECTION 1. The Annual Meeting of the Society shall be held on the third Tuesday in April in each year, or on such day thereafter and at such time and place as may be designated by the Board or Executive Committee.

SEC. 2. Special Meetings of the Society may be called upon order of the President or Chairman of the Executive Committee or on the written request of ten Trustees delivered to the Secretary.

SEC. 3. Notice of each annual and special meeting of the Society, stating the time, place and purpose thereof, shall be mailed, not less than ten nor more than forty days before such meeting, to each member at his address last recorded with the Secretary.

SEC. 4. At all meetings of the Society twenty members shall constitute a quorum.

ARTICLE IV • BOARD OF TRUSTEES

SECTION 1. The property, affairs and business of the Society shall be managed and controlled by a Board of Trustees consisting of thirty-six members divided into three equal classes, together with the Mayor and the Commissioner of Parks of the City of New York who shall be members *ex officio* of the Board. Each class of elected trustees shall hold office for three years and until its successors are elected. The term of office of one class shall expire each year and its successor shall be elected at the annual meeting of the Society.

SEC. 2. No person shall be eligible for election to the Board unless he shall be either a Benefactor, Founder in Perpetuity, Founder, Associate Founder, Patron or Life Member and, excepting to fill vacancies, unless his name shall have been posted as a candidate by the Nominating Committee or by not less than ten members in writing in a conspicuous place in the office of the Society not less than ten days before the annual meeting.

SEC. 3. Vacancies in the Board may be filled for the unexpired term by the Board or Executive Committee at any regular or special meeting, by ballot, by a majority vote of the members present; but no person shall be eligible for election to fill a vacancy unless he shall have been nominated at a meeting of the Board or Executive Committee held not less than four weeks prior thereto.

SEC. 4. The Board shall hold an annual meeting in December in each year, on a date and at a time and place designated by the Board or Executive Com-

mittee. Other meetings of the Board may be called upon order of the President or Chairman of the Executive Committee or at the written request of five Trustees delivered to the Secretary. Twelve Trustees shall constitute a quorum.

SEC. 5. Notice of each meeting of the Board shall be mailed to each Trustee at least seven days before the annual meeting and at least three days before any other meeting.

SEC. 6. A Trustee who shall fail to attend three consecutive meetings of the Board, without being excused by the Board, shall be deemed to have resigned as a Trustee.

SEC. 7. The Board at its annual meeting in each year shall appoint three standing committees — an Executive Committee, a Finance Committee and an Auditing Committee — each of which shall serve for one year, or until its successors are appointed. The Board or Executive Committee may appoint such other Committees and delegate to them such powers as they may deem advisable or necessary. The President shall designate the Chairman of each committee. Any vacancy in any committee including the Executive Committee, however occurring, shall be filled by the Board or Executive Committee. Except as to the Executive Committee, a majority of a committee shall constitute a quorum for the transaction of business, but all action shall be decided by a majority vote of the members of the committee.

ARTICLE V • OFFICERS

SECTION 1. The Board of Trustees at its Annual Meeting in each year shall elect a President, a First Vice President, a Second Vice President, a Treasurer and a Secretary from among the Trustees. The said officers shall hold office respectively for the ensuing year and until their successors are elected. Any vacancy for an unexpired term may be filled by the Board or Executive Committee.

SEC. 2. The President shall preside at all meetings of the Society and of the Board, exercise general supervision of the affairs of the Society, from time to time call attention of the Board to such subjects as in his opinion require consideration. Unless otherwise ordered by the Board or Executive Committee, he shall execute all contracts and instruments on behalf of the Society, and shall exercise the usual functions pertaining to his office. He shall be a member *ex officio* of all standing committees.

SEC. 3. The Vice Presidents, in order of seniority, in case of death, absence, resignation or disability of the President shall perform his duties and exercise his powers.

SEC. 4. The Treasurer shall supervise the collection, receipt and custody of the funds and securities of the Society subject to the order of the Board or Executive Committee and the deposit of all funds of the Society with banks or trust companies approved by the Board or Executive Committee. He shall see that all bills and appropriations are paid as ordered by the Board or Executive Committee and checks shall be signed by such officers and agents as the Board or Executive Committee shall determine. The Treasurer shall supervise the keeping of regular and correct accounts and shall submit reports to the Society at its Annual Meeting, to the Board at all Regular Meetings and to the Executive Committee at each meeting. He shall be a member *ex officio* of the Executive Committee and of the Finance Committee. The books of account of the Society shall be open at all times to the inspection of the Trustees and the Executive, Finance and Auditing Committees. The fiscal year of the Society shall be the calendar year.

SEC. 5. The Secretary, unless otherwise ordered by the Board or Executive Committee, shall cause notices to be issued of all meetings of the Society, the Board and the Executive Committee, attend all such meetings and keep the minutes thereof. He shall affix and attest the seal of the Society to all contracts and instruments executed on behalf of the Society unless otherwise ordered by the Board or Executive Committee. He shall conduct the correspondence of the

Society, have custody of the seal, archives and books, other than books of account, and perform the usual duties pertaining to his office and such other duties as the Board or Executive Committee may direct. He shall be a member *ex officio* of the Executive Committee.

SEC. 6. The Board or the Executive Committee may appoint annually, a General Director. He shall devote his entire time to the affairs of the Society. Subject to the Board, the Executive Committee and the President, he shall be the executive officer of the Society; shall exercise general supervision of all of the activities of the Society at the New York Zoological Park and the New York Aquarium. He shall perform all such other duties in connection with the business, scientific and literary administration of the Society as may be assigned to him by the Board, Executive Committee or the President. The General Director need not be a Trustee.

SEC. 7. The Board or the Executive Committee may appoint annually a Director of the New York Zoological Park. He shall devote his entire time to the affairs of the Society. Subject to the President, the Board and the Executive Committee, he shall be the executive officer of the Park; shall exercise general supervision of the Park and all activities there engaged in by the Society; shall be responsible generally for the performance by all employees at the Park of their respective duties and for the execution of all orders of the Board or Executive Committee and shall engage and discharge personnel, excepting officers, employed at the Park. He shall perform all such other duties in connection with the business, scientific and literary administration of the Society as may be assigned to him by the Board, the Executive Committee and the President. The Director need not be a Trustee.

SEC. 8. The Board or the Executive Committee may appoint, annually, a Director of the New York Aquarium. He shall devote his entire time to the affairs of the Society. Subject to the Board, the Executive Committee and the President and the General Director, he shall be the executive officer of the Aquarium; shall exercise general supervision of the Aquarium and all activities there engaged in by the Society; shall be responsible generally for the performance by all employees of the Aquarium of their respective duties and for the execution of all orders of the Board, Executive Committee or General Director, and shall engage and discharge Aquarium personnel, excepting officers, employed at the Aquarium; he shall perform all such other duties in connection with the business, scientific and literary administration of the Society as may be assigned to him by the Board, the Executive Committee, the President or General Director. The Director of the Aquarium need not be a Trustee.

SEC. 9. The Board or the Executive Committee may appoint annually a Comptroller. The Comptroller shall devote his entire time to the affairs of the Society except as otherwise ordered by the Board or the Executive Committee. He shall act as chief fiscal officer of the Society under the Treasurer; he shall have custody of and preserve all records and documents relating to the property of the Society, keep proper books of account, see that audits thereof are currently and regularly made, and in conjunction with other officers and officials, initiate and enforce measures and procedures whereby the business of the Society shall be conducted with the maximum efficiency and economy. He shall perform all such other duties in connection with the business, scientific and literary administration of the Society as may be assigned to him by the Board, the Executive Committee, the President and the Treasurer. The Comptroller need not be a Trustee.

SEC. 10. The Board or Executive Committee may appoint one or more Assistant Treasurers, Assistant Secretaries and such other officers or officials, including honorary officers, as may be deemed necessary, none of whom need be a Trustee, to serve at the pleasure of the Board or Executive Committee, and may define their respective duties. Honorary officers who are not trustees shall be entitled to attend meetings of the Board and give the Board the benefit of their advice but without voting power. A bank or trust company organized under the laws of the State of New York and having its principal place of business in New York City may be appointed Assistant Treasurer and banks or trust companies organized under

the laws of the United States or of the State of New York and having their principal place of business in New York City may be made custodians of the securities and investments of the Society upon such terms as may be specified and with such powers as may be delegated to them by the Board or Executive Committee.

ARTICLE VI • COMMITTEES

SECTION 1. *Executive Committee*—This Committee shall consist of eight Trustees, and the President, Treasurer and Secretary as members *ex officio*.

In the interim between meetings of the Board, the Executive Committee shall manage and control the property, business and affairs of the Society and exercise all the powers of the Board to the extent not delegated to other Committees or contrary to law. It shall report regularly to the Board, and send copies of its minutes and of reports made to it to each member of the Board.

Regular meetings of the Executive Committee shall be held on the third Tuesday in each month, unless otherwise ordered by the Chairman, at such time and place as shall be fixed by the Chairman. Special meetings may be called upon order of the Chairman or at the written request of three members of the Committee delivered to the Secretary. Four members including the Chairman shall constitute a quorum, but all action shall be decided by a majority vote of the members present.

The Executive Committee shall appoint each year a Nominating Committee which shall hold office for one year and until its successors are appointed.

The Executive Committee shall fix the salaries of the officers and employees of the Society unless otherwise directed by this Committee or the Board.

SEC. 2. *Finance Committee*—This Committee shall consist of not less than three Trustees and the President and Treasurer as members *ex officio*.

Regular meetings of the Finance Committee shall be held quarterly unless otherwise ordered by the Chairman, at such time and place as shall be fixed by the Chairman. Special meetings may be called upon order of the Chairman on not less than three days' written or 24 hours' verbal notice.

The Finance Committee shall have power to sell securities and other investments belonging to the Society and to reinvest proceeds of sale and invest any other funds of the Society available for investment, in such securities or investments as it may deem wise. It shall report quarterly to the Executive Committee all purchases and sales of securities and investments made by it. It may submit to the Board or Executive Committee its recommendations with regard to sales or purchases of securities or other investments.

Notwithstanding the power hereby conferred, the Board or Executive Committee may, at any time, direct the sale of any securities and investments held by the Society, or direct the reinvestment of any proceeds of sale or investment of other funds of the Society available for investment in such securities or investments as it may specify.

Directions to any custodian or depository for the purchase or sale of securities or other investments or other action in connection therewith shall be given by the officers, members of the Finance Committee or such agents as the Board or Executive Committee may from time to time determine.

SEC. 3. *Auditing Committee*—This Committee shall consist of three members, other than members elected pursuant to Article I, Section 6, and the President and the Secretary as members *ex officio*.

The Auditing Committee shall cause the accounts and funds of the Society to be audited and certified annually, or as often as it deems advisable, by a certified public accountant of its selection and shall report to the Board on its examination of the report of the certified public accountant.

SEC. 4. *Nominating Committee*—This Committee shall be composed of three members other than Trustees and members elected pursuant to Article I,

Section 6. This Committee shall select twelve candidates, to succeed the outgoing class of Trustees, to be voted upon at the ensuing annual meeting. The names of such candidates shall be posted in a conspicuous place in the office of the Society at least ten days before the annual meeting.

ARTICLE VII • AMENDMENTS

SECTION 1. These By-Laws may be amended, either by change or repeal of any provision or the adoption of new provisions, at any meeting of the Board by majority vote of the Trustees present, provided such proposed amendment is set forth in full in the notice of such meeting.



